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Journal of the Southern Medical Association

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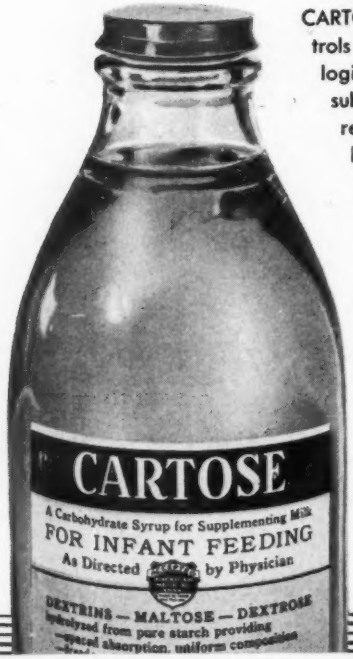

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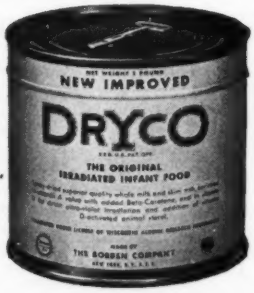

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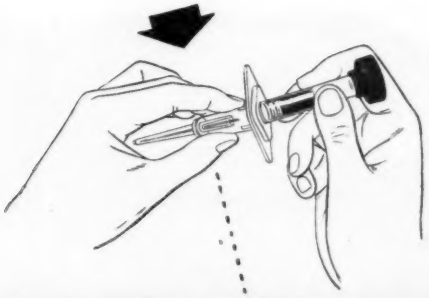

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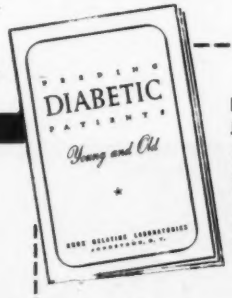

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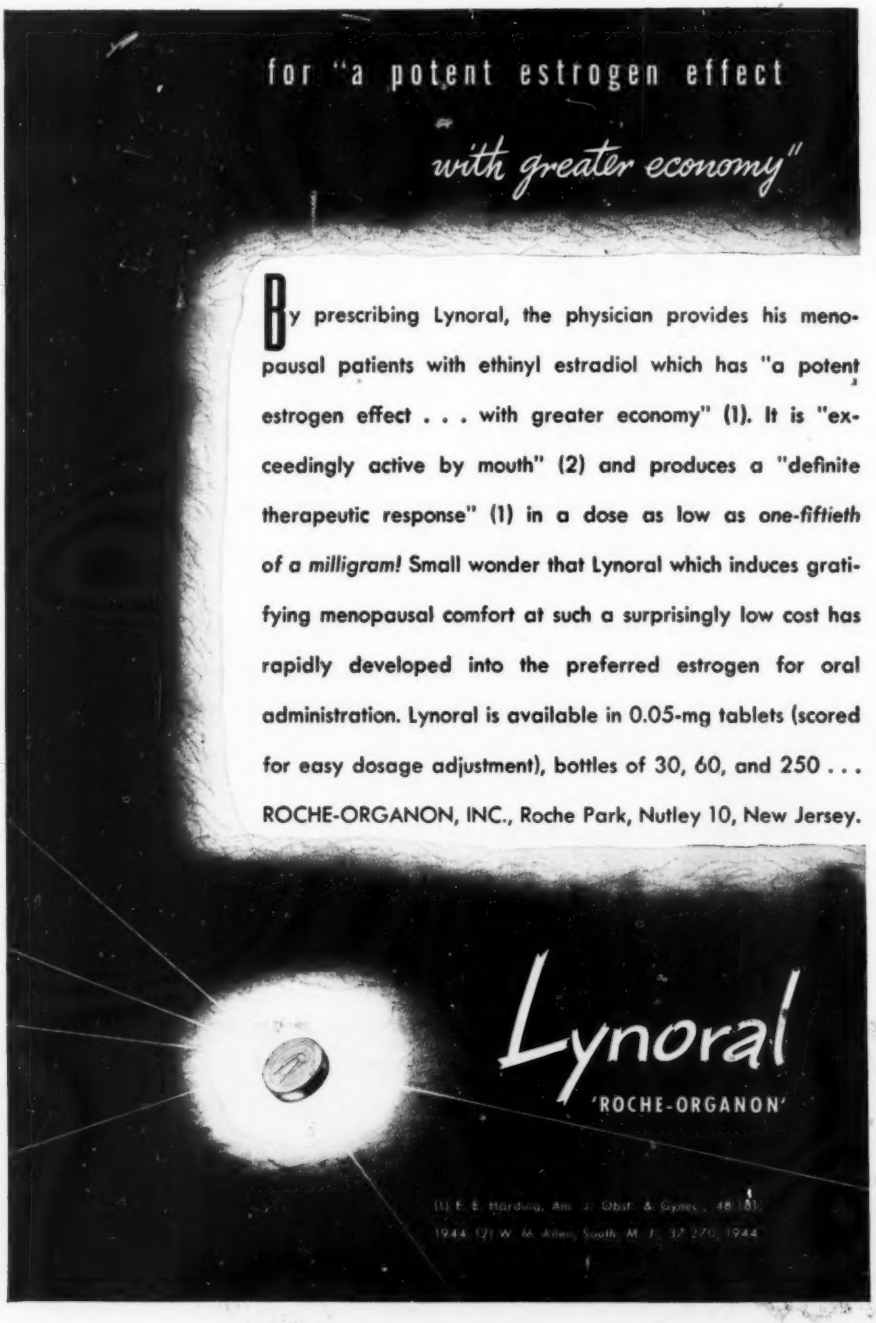
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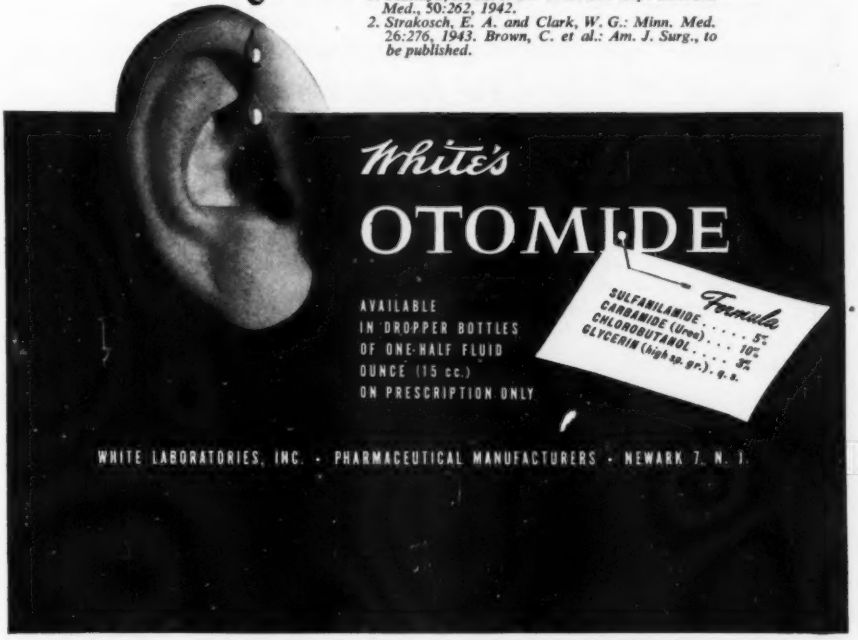
1. *Tsuchiya, H. M. et al.: Proc. Soc. Exp. Biol. and Med., 50:262, 1942.*
2. *Strakosch, E. A. and Clark, W. G.: Minn. Med. 26:276, 1943. Brown, C. et al.: Am. J. Surg., to be published.*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1. Marriott, W. McK.: Infant Nutrition, revised by Jeans, Mosby, St. Louis, 3rd Edition, 1941.
2. Jeans, P. C.: The Feeding of Healthy Infants and Children, J. A. M. A., *120*: 913, 1942.

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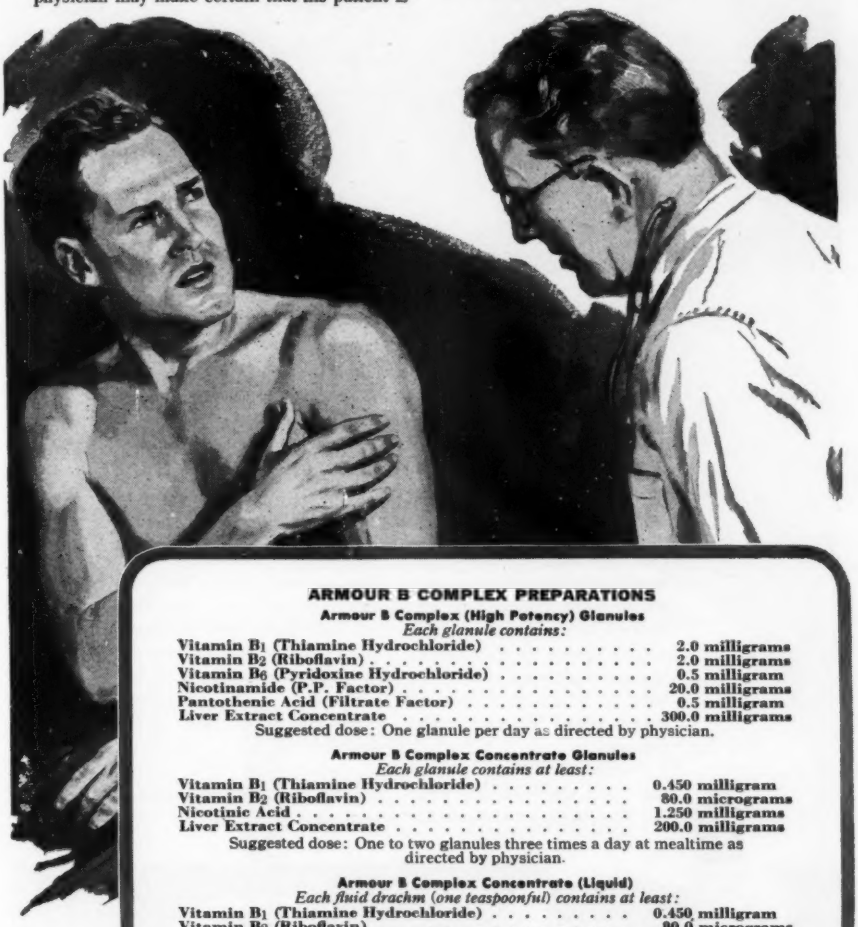

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Supplied in 1.5 oz. tubes; 8 oz. and 16 oz. jars; 5 lb. containers.

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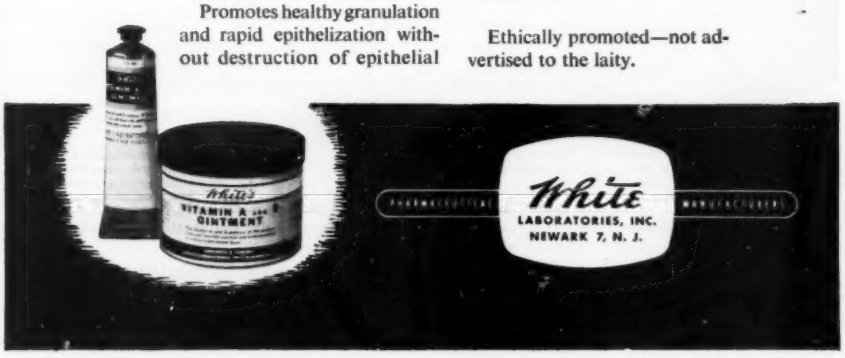
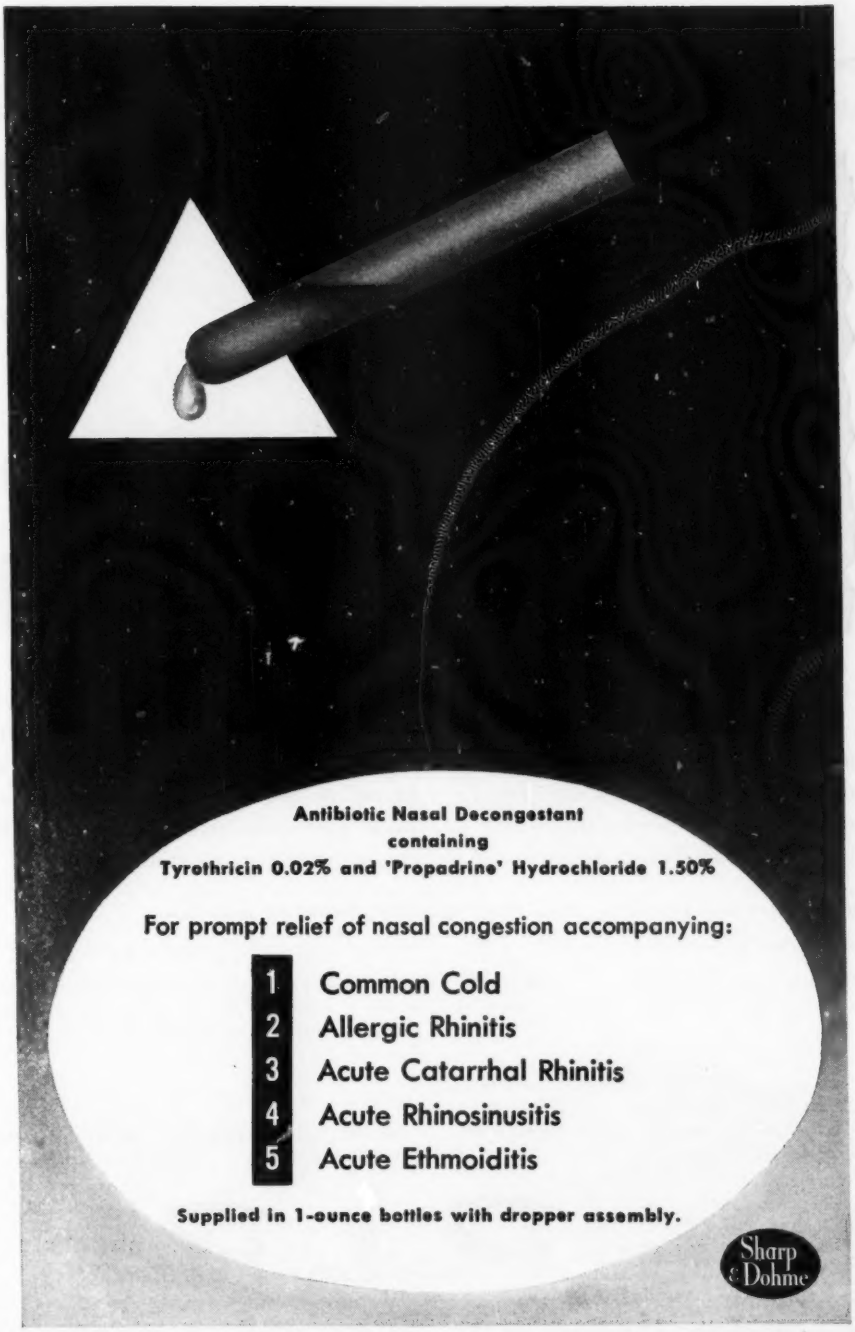



Antibiotic Nasal Decongestant
containing
Tyrothricin 0.02% and 'Propadrine' Hydrochloride 1.50%
For prompt relief of nasal congestion accompanying:
1 Common Cold
2 Allergic Rhinitis
3 Acute Catarrhal Rhinitis
4 Acute Rhinosinusitis
5 Acute Ethmoiditis
Supplied in 1-ounce bottles with dropper assembly.
Sharp & Dohme

Do you know

ABOUT THESE CONVENIENT NEW FORMS OF PENICILLIN?

TABLETS PENICILLIN CALCIUM SQUIBB are individually and hermetically sealed in aluminum foil to prevent deterioration from moisture. Hence physicians can prescribe precisely the number needed without fear of potency loss. Penicillin-destructive gastric juices are buffered by 0.5 gm. of trisodium citrate in each tablet. Tablets Penicillin Calcium Squibb provide 20,000 units, making oral therapy feasible for many conditions which heretofore could be treated only by repeated parenteral injections.

Squibb also has available these new convenient forms of penicillin:

TOPICILLIN CHEWING TROCHES

20,000 units penicillin calcium in a flavored paraffin base, each troche individually wrapped. Box of 6.

TOPICILLIN OINTMENT

General purpose ointment containing 1,000 units penicillin calcium per gram in a base of petrolatum, anhydrous lanolin, beeswax and peanut oil. Tube of 14.5 Gm. (½ oz.)

TOPICILLIN OINTMENT OPHTHALMIC

1,000 units penicillin calcium per gram in a base similar to general purpose ointment, but with consistency adjusted to ophthalmic use. Tube of 3.6 Gm. (⅛ oz.)

DELACILLIN

Penicillin calcium in peanut oil with beeswax, 300,000 units per cc. 1-cc. and 10-cc. vials.

SQUIBB *Penicillin Products*

MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858

WHOLLY NATURAL SOURCE
LOW COST PER DAY
WELL TOLERATED
White's
COD LIVER
OIL
CONCENTRATE
These are advantages which, for many years, have fixed White's Cod Liver Oil Concentrate in the minds of physicians everywhere as their first thought in prescribing.
TO THESE ADVANTAGES ADD economy
Cost to the patient has not increased. Average "infant antirachitic" prophylactic dosage costs still less than a penny a day.
Three palatable, convenient dosage forms — LIQUID (for drop dosage to infants), TABLETS AND CAPSULES.
Ethically promoted — not advertised to the laity.
WHITE'S COD LIVER OIL CONCENTRATE
PHARMACEUTICAL
White
MANUFACTURERS

A new achievement in Penicillin Therapy . . .

BUCILLIN

TRADE-MARK

PENICILLIN TROCHES

WYETH

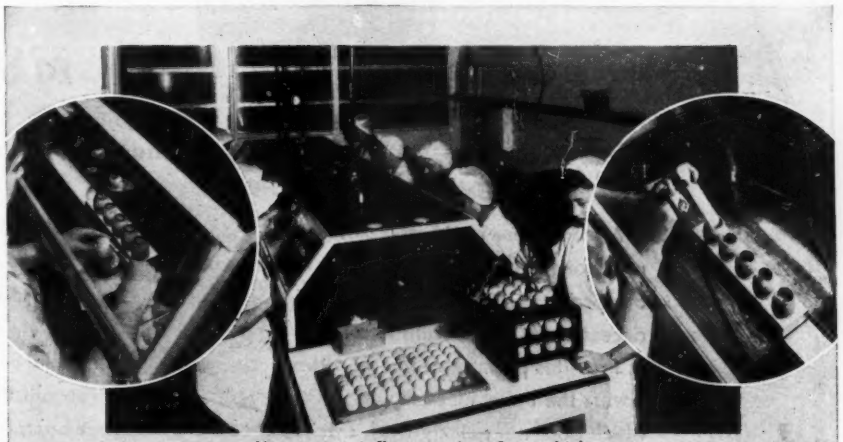
BUCILLIN provides a new, effective weapon against Vincent's infection. As the Bucillin troche dissolves in the mouth it releases penicillin to combat the invading organisms by local action. Until further information is available, no claims are made for the use of Bucillin in other infections of the mouth and throat.

Each Bucillin troche supplies 500 units of penicillin. To assure full potency, the troches are individually wrapped in moisture-proof, laminated metallic foil.

Supplied in packages of 12

Wyeth

WYETH INCORPORATED • PHILADELPHIA 3 • PA.



Harvesting influenza virus from chick extraembryonic fluids

Now It Can Be Told

● The prevalence of Influenza during World War I stimulated increased research for better immunizing agents to control this dread disease.

Since 1933 when Smith, Andrewes and Laidlaw isolated a filtrable virus from patients ill with clinical influenza and established the viral etiology of the disease, numerous attempts to develop a prophylactic vaccine have been made.

Burnet, Henle, and Nigg obtained a high concentration of virus in chick extraembryonic fluids; and vaccines made from such fluids were subsequently studied by a large number of investigators. Some degree of efficacy of these vaccine preparations was shown both by antibody response and by protection against experimental infection of test animals and of human beings.

Although for security reasons the fact has not been previously revealed, the Pitman-Moore Laboratories are now proud to list such a vaccine among the prophylactic and therapeutic medicines of which it has supplied large quantities to the armed forces.

The List Includes:

Sulfonamides
Parenteral Solutions
Antipyretics
Typhus Vaccine
Tetanus Toxoid
Influenza Virus Vaccine

PITMAN-MOORE COMPANY

PHARMACEUTICAL AND BIOLOGICAL CHEMISTS

Division of Allied Laboratories, Inc., · Indianapolis 6, Indiana

vasoconstriction in minutes

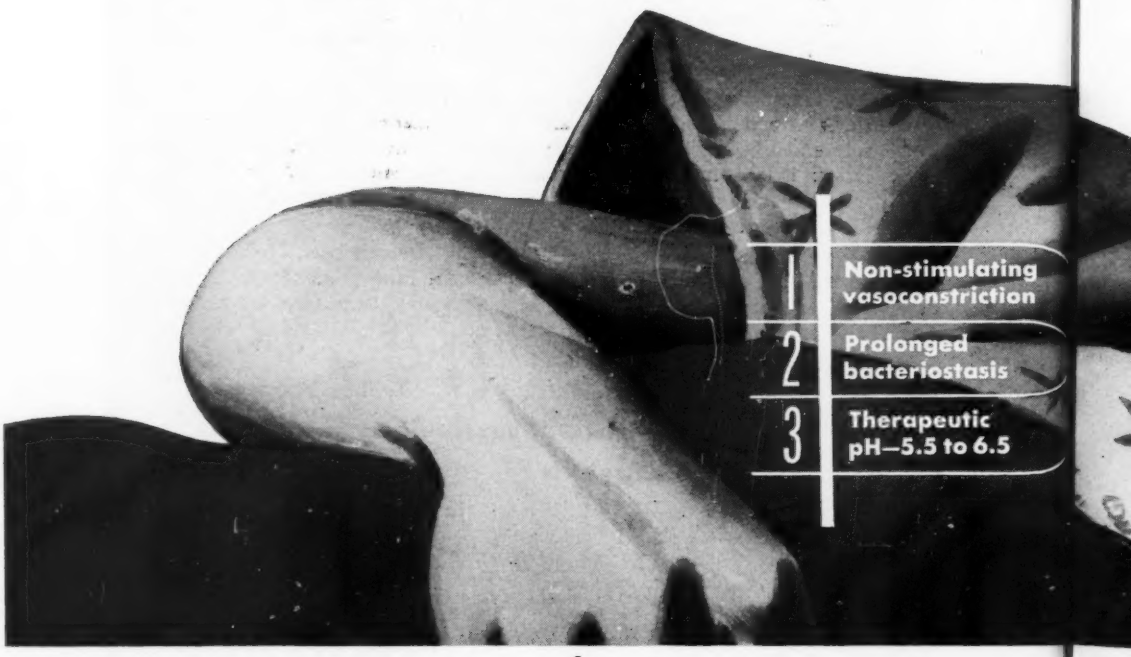
In the treatment of nasal and sinus infections, Paredrine-Sulfathiazole Suspension . . .

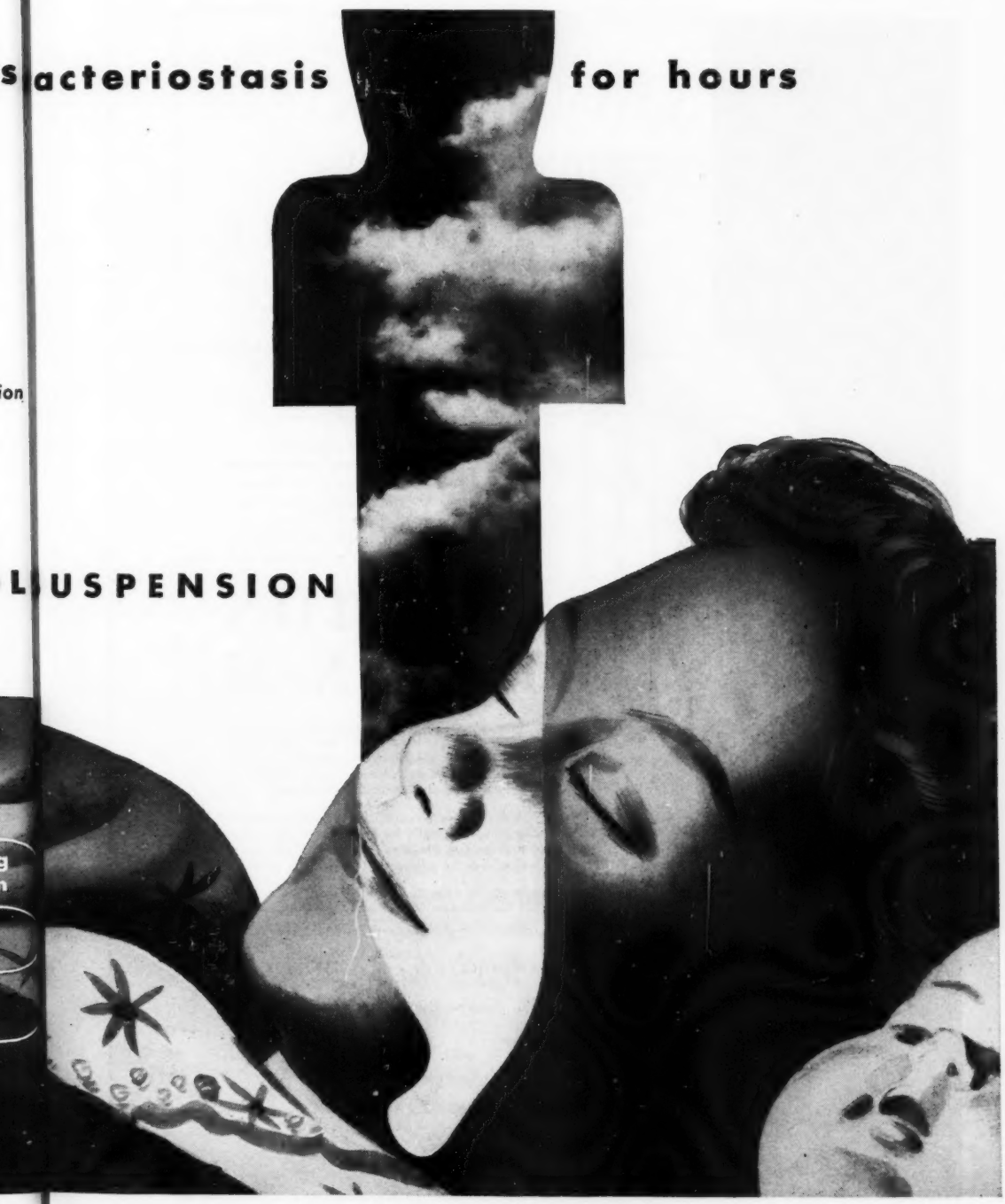
1. Affords more rapid, complete and prolonged shrinkage than that produced by ephedrine in equal concentration. Ventilation and drainage are promptly promoted and infected areas are quickly rendered accessible to the sulfathiazole.

2. Provides prolonged bacteriostasis. Paredrine-Sulfathiazole Suspension covers the nasal mucosa with a fine, even frosting of free sulfathiazole, which does not quickly wash away, *but keeps producing bacteriostatic action hour after hour.* (An objection to solutions of sodium sulfathiazole is the improbability of their remaining in contact with the mucosa long enough to be effective.)

Smith, Kline & French Laboratories—Philadelphia, Pa.

PAREDRINE—SULFATHIAZOL




acteriostasis for hours
USPENSION

STRENGTH AND ENDURANCE

may be impaired in middle-aged men when male sex hormone diminishes and the climacteric begins. For such patients, therapy with ORETON supplies needed testosterone and alleviates promptly the diverse symptoms of the disturbed endocrine balance.

With ORETON, androgen-deficient patients "register their appreciation of a definite change in the muscular system"[1] and are quickly aware of "greater mental ability, not only in concentration, but in fulfilling of social and economic responsibilities."[2]

ORETON
ORETON-M

ORETON in oil for intramuscular injection in ampules of 1 cc. containing 5, 10 and 25 mg. testosterone propionate. Average male climacteric patients require 25 mg. ORETON injected three times weekly, decreasing dosage and increasing the interval with improvement.

ORETON-M Tablets containing 10 mg. methyl testosterone may be used initially for mild climacteric symptoms, average dosage consisting of three to six tablets daily. Dosage may be adjusted subsequently to need.

1. Kearns, W. M.: J. Clin. Endocrinol. 1:126, 1941.
2. Dunn, C. W.: Delaware State M. J.11:76, 1939.

TRADE-MARKS ORETON AND ORETON-M — REG. U. S. PAT. OFF.

Schering CORPORATION • BLOOMFIELD, N. J.

IN CANADA, SCHERING CORPORATION LIMITED, MONTREAL

Announcing...

PENICILLIN OINTMENT SCHENLEY

It is possible by topical application to reach local levels of penicillin activity far in excess of the highest ranges maintained by intravenous and intramuscular administration.

Penicillin Ointment Schenley is indicated in the treatment of superficial infections of the skin caused by penicillin-sensitive organisms. In deep-seated pyogenic infections with penicillin-sensitive organisms, the ointment may be used as an adjunct to systemic penicillin therapy and other measures.

When you specify Penicillin Ointment Schenley, you are assured of the highest standard of excellence, because Schenley Laboratories maintains the same rigid program of control for this ointment as it has always maintained for Penicillin Schenley.

SCHENLEY LABORATORIES, INC.
Executive Offices: 350 Fifth Avenue, New York City

Multiple Vitamin Supplementation

LOGICAL, ECONOMICAL PRODUCT FOR A LOGICAL NEED

EACH CAPSULE CONTAINS:

Vitamin A	5000 U.S.P. units
Vitamin D	800 U.S.P. units
Thiamine Hydrochloride, U.S.P.	3 mg.
Riboflavin	3 mg.
Ascorbic Acid, U.S.P.	75 mg.
Nicotinamide	20 mg.
Pyridoxine Hydrochloride	0.5 mg.
Calcium Pantothenate	5 mg.
Mixed Tocopherols biologically equivalent to 3 mg. Alpha Tocopherol.	

In those conditions for which multiple vitamin supplementation is rationally indicated,†

White's

NEO MULTI-VI CAPSULES

offer a preparation formulated upon a sound therapeutic basis—realistic efficiency—practical usefulness—and *economy* to the patient.

The well-balanced formula contains nine vitamins—including all clinically established vitamins in amounts safely above adult basic daily requirements,* yet not wastefully in excess of average patient's needs.

Small, easy-to-take capsules. Price to the patient is also small for comparable vitamin potency. The White name is assurance of stability and uniformity.

†**Indications:** Routine prophylaxis against dietary deficiencies—increased metabolic rate—thyroid dysfunction; suspected border-line multiple deficiencies; suboptimal nutrition—restricted diets—the aged—wasting disease—pre- and post-operatively—in convalescence—pregnancy—lactation.

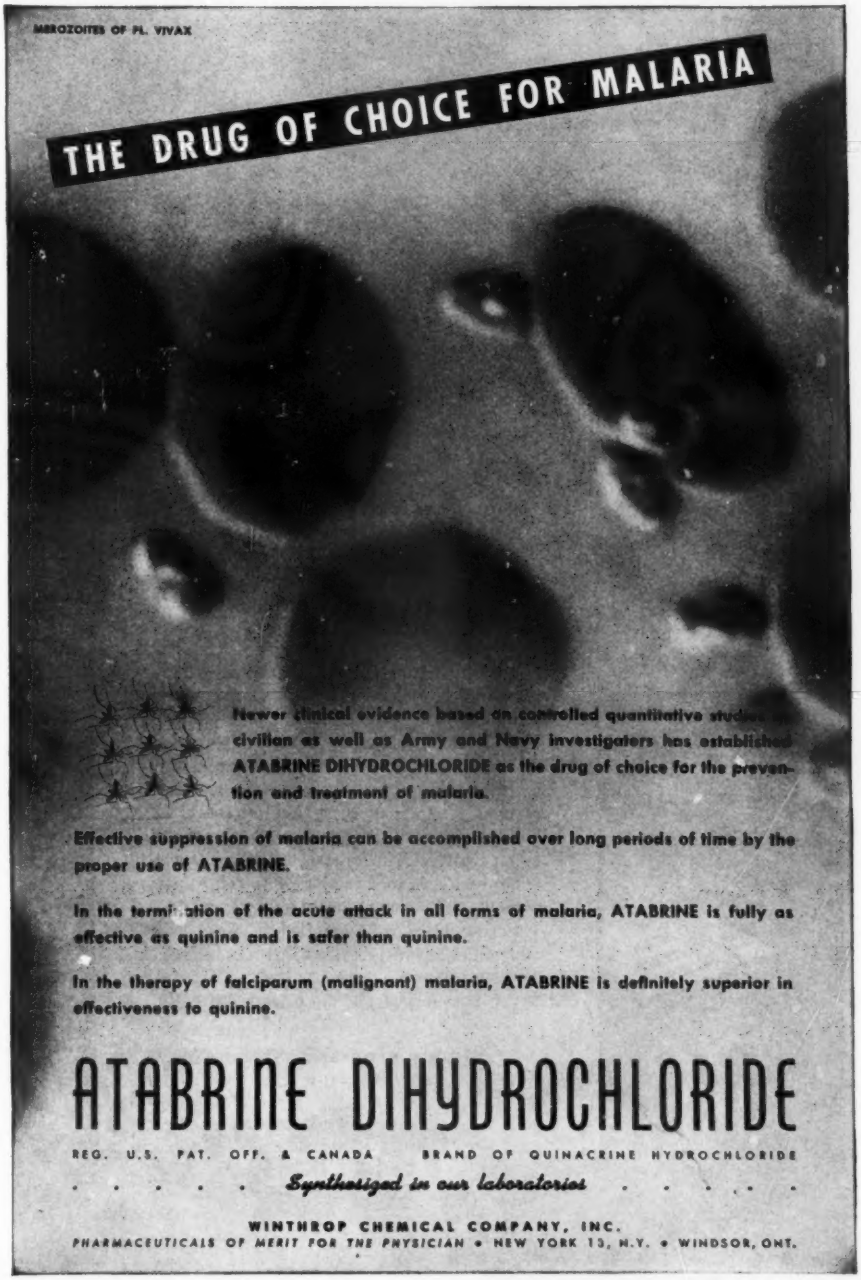
Bottles of 25, 100, 500 and 1000 capsules

*Promulgated in regulations of Food and Drug Administration, 1941

Ethically promoted—not advertised to the laity

WHITE LABORATORIES, INC.

Pharmaceutical Manufacturers, Newark 7, N. J.



Newer clinical evidence based on controlled quantitative studies by civilian as well as Army and Navy investigators has established ATABRINE DIHYDROCHLORIDE as the drug of choice for the prevention and treatment of malaria.

Effective suppression of malaria can be accomplished over long periods of time by the proper use of ATABRINE.

In the termination of the acute attack in all forms of malaria, ATABRINE is fully as effective as quinine and is safer than quinine.

In the therapy of falciparum (malignant) malaria, ATABRINE is definitely superior in effectiveness to quinine.

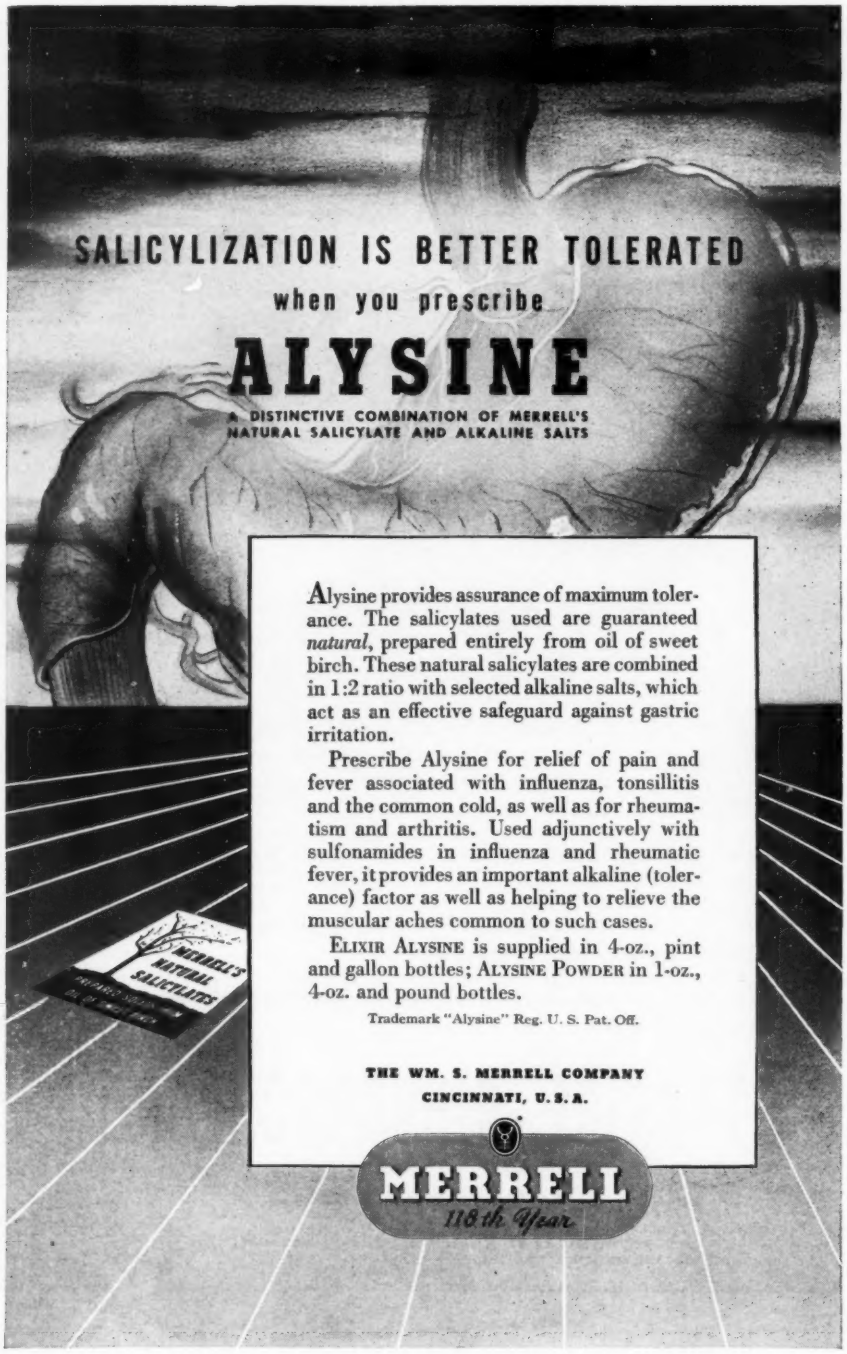
ATABRINE DIHYDROCHLORIDE

REG. U.S. PAT. OFF. & CANADA BRAND OF QUINACRINE HYDROCHLORIDE

Synthesized in our laboratories

WINTHROP CHEMICAL COMPANY, INC.

PHARMACEUTICALS OF MERIT FOR THE PHYSICIAN • NEW YORK 13, N.Y. • WINDSOR, ONT.


SALICYLIZATION IS BETTER TOLERATED
when you prescribe
ALYSINE
A DISTINCTIVE COMBINATION OF MERRELL'S NATURAL SALICYLATE AND ALKALINE SALTS
Alysine provides assurance of maximum tolerance. The salicylates used are guaranteed *natural*, prepared entirely from oil of sweet birch. These natural salicylates are combined in 1:2 ratio with selected alkaline salts, which act as an effective safeguard against gastric irritation.
Prescribe Alysine for relief of pain and fever associated with influenza, tonsillitis and the common cold, as well as for rheumatism and arthritis. Used adjunctively with sulfonamides in influenza and rheumatic fever, it provides an important alkaline (tolerance) factor as well as helping to relieve the muscular aches common to such cases.
ELIXIR ALYSINE is supplied in 4-oz., pint and gallon bottles; ALYSINE POWDER in 1-oz., 4-oz. and pound bottles.
Trademark "Alysine" Reg. U. S. Pat. Off.
THE WM. S. MERRELL COMPANY
CINCINNATI, U. S. A.
MERRELL'S NATURAL SALICYLATES
MERRELL
118th Year

a less irritating
vasoconstrictor—

"a benzedrine
inhaler is probably the
least irritating of
any method for shrinking
the nasal mucosa..."

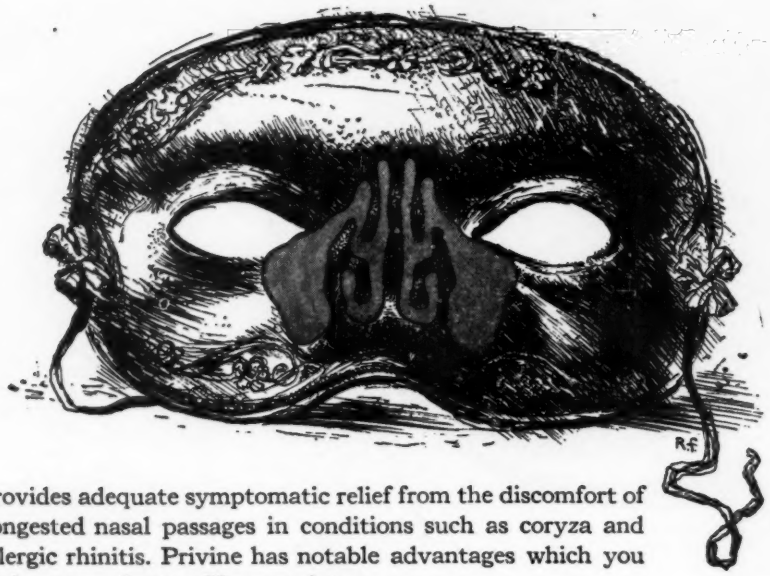
a better means of nasal medication

Benzedrine Inhaler, N.N.R., does not give rise to any significant degree of secondary turgescence, atony or bogginess, when used as directed. Furthermore, according to Proetz, it causes "no appreciable change in the amplitude or rapidity of the ciliary beat."
The Inhaler produces a shrinkage of the nasal mucosa equal to, or greater than, that produced by ephedrine.
Each Benzedrine Inhaler is packed with racemic amphetamine, S.K.F., 200 mg.; menthol, 10 mg.; and aromatics.
Smith, Kline & French Laboratories, Philadelphia, Pa.

BENZEDRINE INHALER

...remove the mask of nasal congestion!

PRIVINE HYDROCHLORIDE



provides adequate symptomatic relief from the discomfort of congested nasal passages in conditions such as coryza and allergic rhinitis. Privine has notable advantages which you and your patients will appreciate:

- **Dramatic promptness of action.**
- **Prolonged vasoconstriction.**
- **Non-interference with ciliary activity.**
- **Absence of irritation.**

Privine, accepted by the A.M.A. Council on Pharmacy and Chemistry, is offered in two concentrations: 0.1 per cent, recommended for adults only; 0.05 per cent for children, also found effective in many adult cases. Your pharmacy can supply Privine in bottles of 1 oz. and 16 ozs.

PRIVINE *Trade Mark Reg. U. S. Pat. Off. and in Canada*

Ciba

Steroid Hormones · Fine Pharmaceuticals

CIBA PHARMACEUTICAL PRODUCTS, INC.

SUMMIT, NEW JERSEY

In Canada: CIBA COMPANY LIMITED, MONTREAL

ILLUSTRATION BY ANDREW LOOMIS

A boy, a picture, and a dream

CHOICE OF A LIFE WORK is often a matter of circumstance. Events that seem trivial at the moment may be destined to influence the lives of generations to come. When seventeen-year-old Eli Lilly paused to study a painting of the Good Samaritan hanging over a drug store, the parable which he had learned at his mother's knee recurred to him with fond nostalgic memory. The picture inspired Eli Lilly to choose pharmacy as a career and eventually led to the founding of Eli Lilly and Company. Then the smallest pharmaceutical plant in existence, now among the largest, the success of Eli Lilly and Company must be measured largely by economic standards. Through the seventy years of its existence, however, the spirit of the Good Samaritan has never ceased to be a guiding light.

Uncertainty eliminated

The element of uncertainty is eliminated when liver extracts bearing the Lilly Label are properly employed in the treatment of pernicious anemia. Both Liver Extract Solution, Crude, Lilly, and Liver Extract Solution, Purified, Lilly, are standardized on patients with pernicious anemia in relapse and will produce a standard reticulocyte response when the recommended dosage is administered.

Liver Extract Solution, Crude, Lilly, is available in 1 U.S.P. unit per cc. and 2 U.S.P. units per cc. strengths. Liver Extract Solution, Purified, Lilly, is available in 15 U.S.P. units per cc., 10 U.S.P. units per cc., and 5 U.S.P. units per cc. strengths. Specify Lilly.

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U.S.A.

These distinctive attributes suggest

MANDELAMINE

Reg. U. S. Pat. Off.
(Methenamine Mandelate)

- Lack of Toxicity
- Convenience of Therapy
- Prompt, Effective Action
- Wide Range of Therapeutic Activity

Mandelamine is supplied in enteric coated tablets of 0.25 Gm. (3¾ grains) each, in packages of 120 tablets sanitaped, and in bottles of 500 and 1000.

NEPERA CHEMICAL CO. INC.
21 Gray Oaks Ave.
Yonkers 2, New York
Please send me literature, and a physician's sample of Mandelamine.

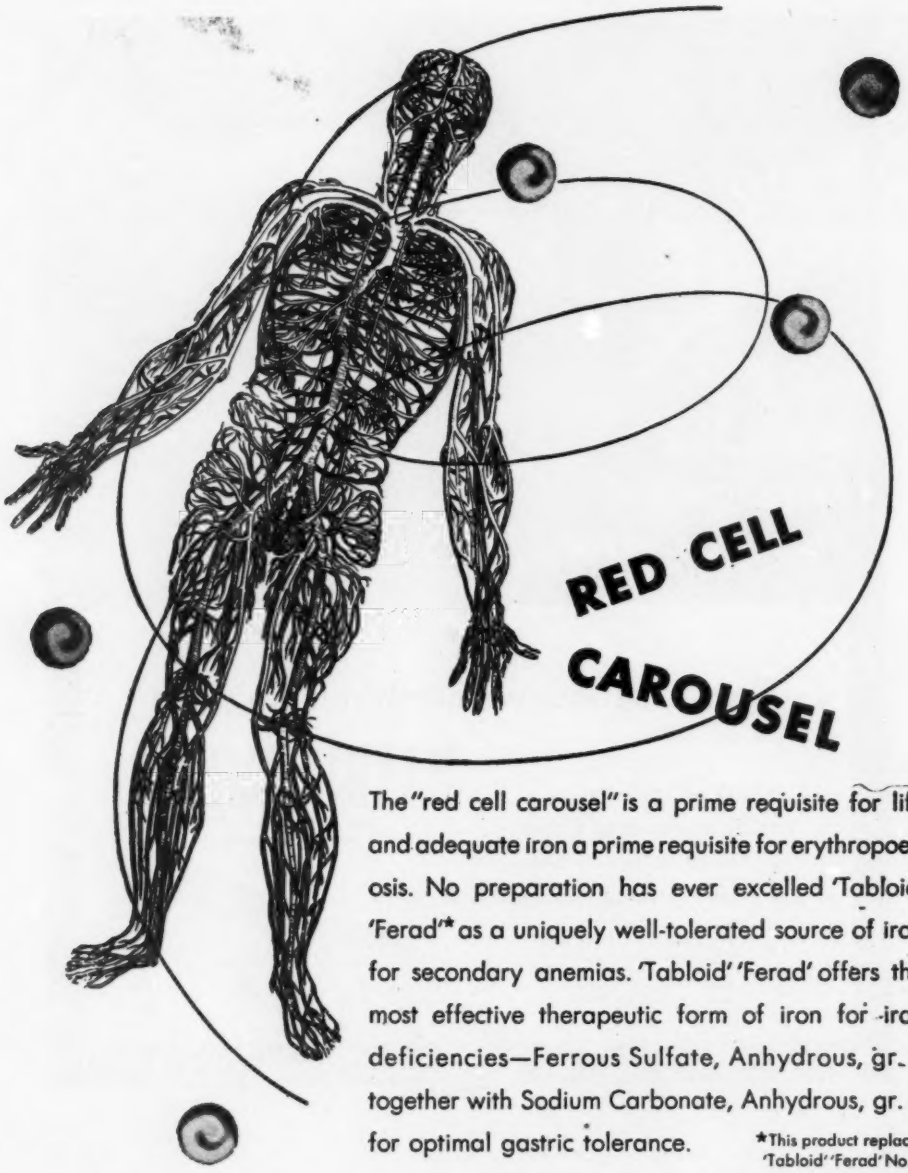
Name.....M.D.

Street.....

City.....State.....

NEPERA CHEMICAL CO. INC.

Manufacturing Chemists Yonkers 2, New York



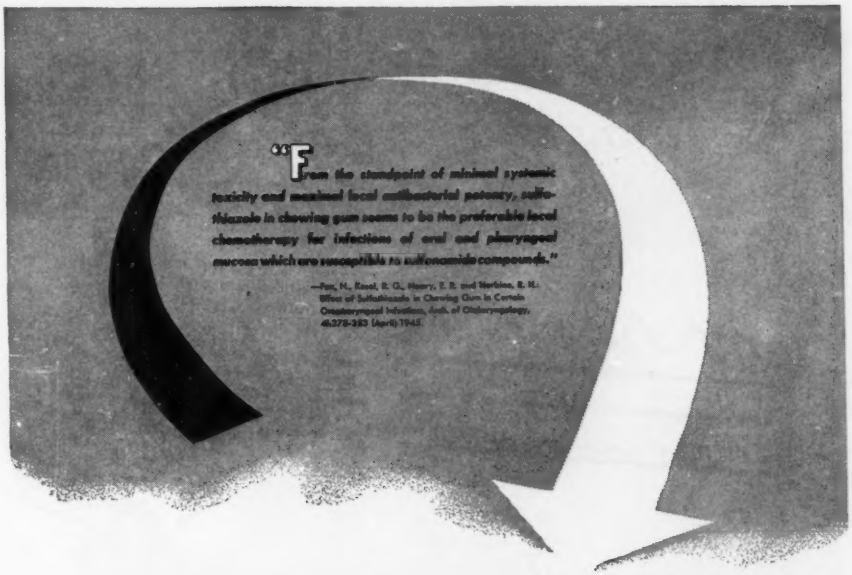
The "red cell carousel" is a prime requisite for life and adequate iron a prime requisite for erythropoeiosis. No preparation has ever excelled 'Tabloid' 'Ferad'* as a uniquely well-tolerated source of iron for secondary anemias. 'Tabloid' 'Ferad' offers the most effective therapeutic form of iron for iron deficiencies—Ferrous Sulfate, Anhydrous, gr. 3 together with Sodium Carbonate, Anhydrous, gr. 2 for optimal gastric tolerance.

*This product replaces 'Tabloid' 'Ferad' No. 2

'TABLOID' 'FERAD'

Bottles of 100 and 500...'Tabloid' and 'Ferad' Reg. Trademarks

BURROUGHS WELLCOME & CO. (U.S.A.) INC., 9 & 11 EAST 41ST ST., NEW YORK 17, N.Y.


"From the standpoint of minimal systemic toxicity and maximal local antibacterial potency, sulfathiazole in chewing gum seems to be the preferable local chemotherapy for infections of oral and pharyngeal mucosa which are susceptible to sulfonamide compounds."
—Fox, M., Rosal, R. O., Henry, E. R. and Herbine, R. H.: Effect of Sulfathiazole in Chewing Gum in Certain Oropharyngeal Infections, Arch. of Otolaryngology, 41:378-383 (April) 1945.

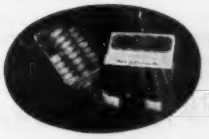
White's SULFATHIAZOLE GUM*

INDICATIONS: Local treatment of sulfonamide-susceptible infections of oropharyngeal areas: acute tonsillitis and pharyngitis—septic sore throat—infectious gingivitis and stomatitis—Vincent's infection. Also indicated in the prevention of local infection secondary to oral and pharyngeal surgery.

ADVANTAGES: A single tablet chewed for *one-half to one hour* provides a salivary concentration of locally active sulfathiazole averaging approximately 70 mg. per cent. Moreover, resultant blood levels of the drug, even with maximal dosage, are so low (rarely reaching 0.5 to 1 mg. per cent) that systemic toxic reactions are virtually eliminated.

DOSAGE: One tablet chewed for *one-half to one hour* at intervals of one to four hours, depending upon the severity of the condition. If preferred, several tablets—rather than a single tablet—may be chewed *successively* during each dosage period without significantly increasing the amount of sulfathiazole systemically absorbed.

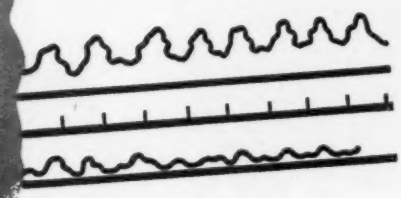
IMPORTANT: Please note that your patient requires your prescription to obtain this product from the pharmacist.



In packages of 24 tablets, sanitaped, in slip-sleeve prescription boxes.

* A Product of WHITE LABORATORIES, INC., Pharmaceutical Manufacturers, Newark 7, N. J.

THE *CRAMPS* OF DYSMENORRHEA
brought under control



Menstruating uterus, human: cramp-like contractions with tetany and acute pain.

•

Same uterus, after administration of Pavatrine. The contractions are of considerably less amplitude, and nearer the base line.

Intrauterine balloon tracings reveal that Pavatrine has a morphine-like action in counteracting the tetanic contractions of essential dysmenorrhea. Symptomatic relief is afforded during the period of spasmolytic effect.

PAVATRINE

(B-diethylaminoethyl fluorene-9-carboxylate-hydrochloride)

Indicated in:

- Dysmenorrhea due to hypertonicity or excessive contractions.
- Gastrointestinal Spasm—gastric, duodenal, colonic.
- Urinary Bladder Spasm—in cystitis, instrumentation or tenesmus.

•

Average Dose: 1 or 2 tablets three times daily.

Pavatrine is the registered trademark of G. D. Searle & Co., Chicago 80, Illinois.

SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

In Estrogenic Therapy **TOLERANCE**

One of the important advantages of "Premarin" lies in the fact that it is exceptionally well tolerated. Although highly potent, "Premarin" rarely produces unpleasant side effects—a statement which finds ample corroboration in the extensive bibliography. In "Premarin" the physician will find a medium for estrogenic therapy which is noted for its therapeutic effectiveness. "Premarin" is derived exclusively from natural sources and its administration is usually followed by what is invariably described by the patient as a general feeling of well-being.

ESSENTIALLY SAFE · HIGHLY POTENT · ORALLY ACTIVE
NATURALLY OCCURRING · WATER SOLUBLE
WELL TOLERATED · IMPARTS A FEELING OF WELL-BEING

"Premarin" *conjugated estrogens (equine)*
Reg. U. S. Pat. Off.
TABLETS

Available in 2 potencies: No. 866 (the YELLOW tablet), in bottles of 20, 100 and 1,000 tablets.
No. 867 Half-Strength (the RED tablet), in bottles of 100 and 1,000 tablets.

Ayerst

AYERST, McKENNA & HARRISON LTD., 22 East 40th Street, New York 16, N. Y.

a good supporting hand

in sulfonamide therapy is provided by 'ALKA-ZANE'* Alkaline Effervescent Compound. Administered in water, 'ALKA-ZANE' Alkaline Effervescent Compound helps maintain the degree of urinary alkalinity and high fluid intake essential to solubility of sulfonamides and their acetyl derivatives . . . for the prevention of crystalluria and obstruction of the kidneys and urinary tract.

'ALKA-ZANE' Alkaline Effervescent Compound makes a refreshing, effervescent drink which supplies the principal bases of the alkaline reserve, sodium, calcium and magnesium, as readily assimilable carbonates, citrates, and phosphates.

For additional pharmaceutical details consult your pharmacist—for more extensive medical data write Medical Division of William R. Warner & Co.

William R WARNER and Co. Inc. 113 WEST 18TH STREET, NEW YORK 11, N. Y.

'alka-zane'

Alkaline Effervescent Compound Bottles of 1¼, 4 and 8 ounces.

*Trademark Reg. U. S. Pat. Off.

Introducing

Vasano

FOR TRAVEL SICKNESS

Investigators in the medical corps of the United States Navy, the British Royal Navy, the air forces and elsewhere have demonstrated that hyoscine (scopolamine), whose effects are afforded by VASANO, is the best single agent for the treatment of all forms of travel sickness.[1-4]

VASANO, Schering's hyoscine preparation, brings to civilian practice the proved benefits of this war-time therapeutic advance. Consistently most effective for seasickness as well as a "potent preventive of airsickness" hyoscine causes no harmful side effects in recommended dosage.

Adult Dose: Two tablets or one suppository 1 to 2 hours before departure, repeated in 3 to 4 hours if necessary. A total of four tablets in 24 hours should not be exceeded.

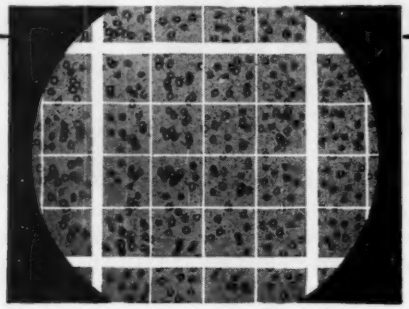
1. Holling, H. E.; McArdle, B., and Trotter, W. R.: Lancet, *1*:127, 1944.
2. Hill, I. G. W., and Guest, A. I.: Brit. M. J. *2*:6, 1945.
3. British Naval Medical Bulletin No. 4 (as reported in the Bulletin of War Medicine, vol. 4, pp. 306, 307 (January, 1944).
4. Lillienthal, J. L.: Jl. Aviation Med. *16*:59, 1945.

SCHERING

Schering CORPORATION • BLOOMFIELD, N. J.
IN CANADA, SCHERING CORPORATION LIMITED, MONTREAL

Number 3 of a Series

IN ANEMIA OF CHRONIC BLOOD LOSS



In the management of chronic blood loss, therapy designed to support red cell and hemoglobin formation is essential. Iron must be supplied to correct hypochromia; liver and the B vitamins bolster an overworked bone marrow in the production of red cells. The combination is more effective than iron alone.

HEPATINIC

presents iron in readily assimilable ferrous form, together with Crude (Unfractionated) Liver Concentrate and Vitamin B Complex.

Crude (Unfractionated) Liver Concentrate is prepared so that it retains the erythropoietic and nutritional principles of whole liver, which are lost in the highly refined concentrates. Furthermore, it is subjected to enzymatic digestion to provide maximum assimilation and prompt therapeutic response.

The appealing and palatable taste of Hepatinic assures patient acceptance and particularly recommends the product for pediatrics.

FORMULA: Each fluidounce Elixir Hepatinic contains:

Ferrous Sulfate 12 gr., Crude (Unfractionated) Liver Concentrate (equivalent to 660 gr. fresh liver) 60 gr. Thiamine Hydrochloride 2 mg., Riboflavin 4 mg., Niacinamide 20 mg., together with pyridoxine, pantothenic acid, choline, folic acid, vitamin B_{10}, vitamin B_{11}, biotin, inositol, para-amino-benzoic acid, and other factors of the vitamin B complex.

Bottles of one pint and one gallon. Tasting samples on request.

McNeil Laboratories
INCORPORATED
PHILADELPHIA • PENNSYLVANIA

ASCORBIC ACID

PARENTERALLY

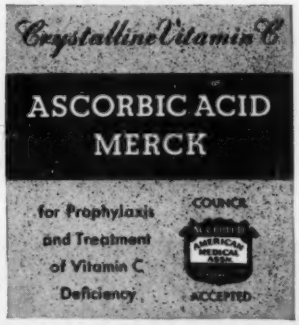
The chemical synthesis of pure ascorbic acid has made possible the parenteral administration of this vitamin in adequate, accurate dosage.

In the presence of gastro-intestinal disturbances, impairment of absorption may precipitate vitamin C deficiency despite a presumably adequate intake of the vitamin. When there is persistent vomiting, diarrhea, or any other condition preventing the utilization of sufficient vitamin C, the parenteral administration of Ascorbic Acid Merck will be of value.

Literature on Request

He Works for a Better Tomorrow

AMID a maze of test tubes, beakers, flasks, and other laboratory apparatus, the research chemist diligently searches for new means of preventing and combating disease. By conducting intricate and delicate experiments, he extracts from nature the secrets of the vitamins, hormones, amino acids, antibiotics, and other substances which are so important in the fields of medicine and nutrition. Slowly, steadily, research has gained ground against the ravages of disease. Much has been done, but much remains to be accomplished. And only by constant application can true progress be made so that the scientist's dreams of the present may become the beneficial realities of the future. Fully aware of their heritage of responsibility, Merck research chemists will continue to work for a better tomorrow.



MERCK & CO., Inc. *Manufacturing Chemists* RAHWAY, N. J.

terra firma

The management of hemorrhoids rests on solid therapeutic grounds when it achieves relief without resort to dangerous local narcotization or anesthetization. 'ANUSOL'* Hemorrhoidal Suppositories contain neither anesthetic nor narcotic agents and so do not mask the symptoms of more serious rectal pathology. Quick, safe relief is attained by the removal of inflammatory pressure on the nerve endings. Burning and itching are soothingly abated while demulcent protection guards against the complications of bleeding and infection.

Schering & Glatz, Inc., a subsidiary of

William R. WARNER and Co. Inc. 113 WEST 18TH STREET, NEW YORK 11, N. Y.

'anusol'

*Trademark Reg. U. S. Pat. Off.

Boxes of 6 and 12 suppositories

Hemorrhoidal Suppositories

YOU CAN'T CLAMP *A CAPILLARY*

Hemorrhage—annoying to the operator, disturbing to the patient, sometimes unexpected and alarming—presents ever-recurring problems. The control of capillary bleeding through the administration of a safe blood coagulant has become a widely used adjunctive addition to other procedures.

CEANOTHYN

—an extract of Ceanothus americanus—has been used over a period of many years to increase the coagulability of the blood—reduce clotting time. Ceanothyn is administered orally, acts rapidly, is non-toxic, has no known contraindications.

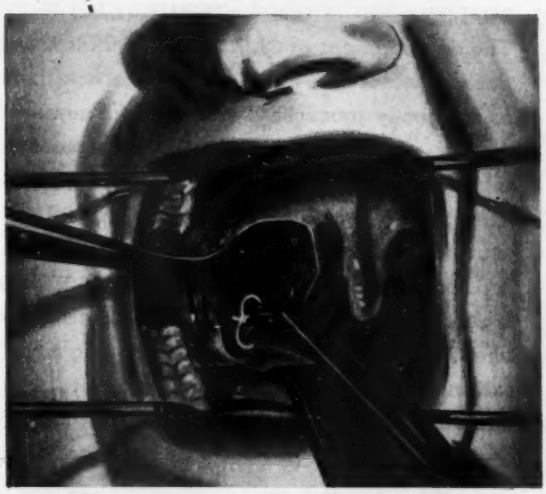
Many surgeons give Ceanothyn routinely prior to operation—especially in nose and throat surgery. Ceanothyn is particularly useful also in menorrhagia, metrorrhagia and post-partum bleeding.

Other indications: Epistaxis, gastric and intestinal hemorrhage, kidney and bladder hemorrhage, and pulmonary hemorrhage.

Supplied in convenient pint-size bottles for office use. Available for your prescription at ethical pharmaries.

CEANOTHYN...

CLEARS THE FIELD • RETARDS CAPILLARY BLEEDING



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DECATUR • ILLINOIS

PALATABLE • WELL TOLERATED • THERAPEUTICALLY EFFECTIVE

The development of CALCREOSE (Maltbie) has, indeed, "smoothed the rough spots" in creosote therapy so frequently provocative heretofore of nausea and distress. • Moreover, CALCREOSE (calcium creosotate) exerts bactericidal and bacteriostatic action up to *three times as great* as that of creosote. • Thus, in providing all the well-known benefits of creosote in a *pleasant* and *palatable* form, CALCREOSE proves highly effective in many bronchial and respiratory affections . . . lessening cough, diminishing expectoration, reducing its purulency and deodorizing sputum. Also it tends to stimulate the appetite and improve the patient's general condition.

AVAILABLE: As tablets (4 gr.) in bottles of 100, 500, and 1000. COMPOUND SYRUP CALCREOSE in pint or gallon bottles.

Calcreose

THE MALTBIE CHEMICAL COMPANY • NEWARK, NEW JERSEY

A Fundamental Approach
TO SULFUR METABOLISM

HYDROSULPHOSOL

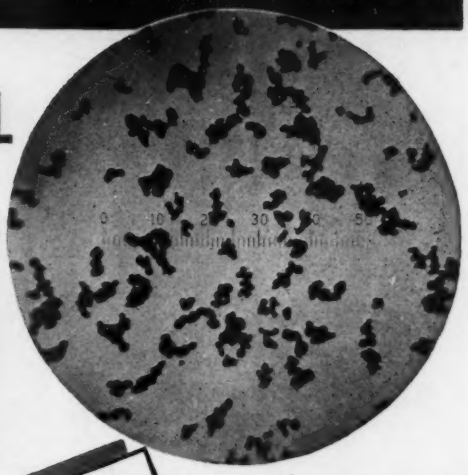

Illustration showing flowers of sulfur magnified 82X: small divisions = 10 microns. The size of the colloidal sulfur particle in Hyarosulphosol is estimated at 1/1000 of a micron or 1/10,000 of the small division particle illustrated.

A true solution of sulfur bearing compounds resulting solely from the reduction of flowers of sulfur by a catalytic process. In aqueous solution, it is capable of releasing its unusually high concentration of sulfhydryl ion in readily utilizable form . . . without evidence of toxic reaction.

Its therapeutic importance may best be evaluated by the fact that the —SH radical of the cysteine forms the active group in glutathione, alone of reported importance in connection with tissue oxidations.

Hydrosulphosol is indicated in the management of burns, ulcers and pathological conditions in which sulfur metabolism is a clinical consideration.

Reprints of scientific papers by authoritative investigators available on request.

Rees-Davis Drugs, Inc.
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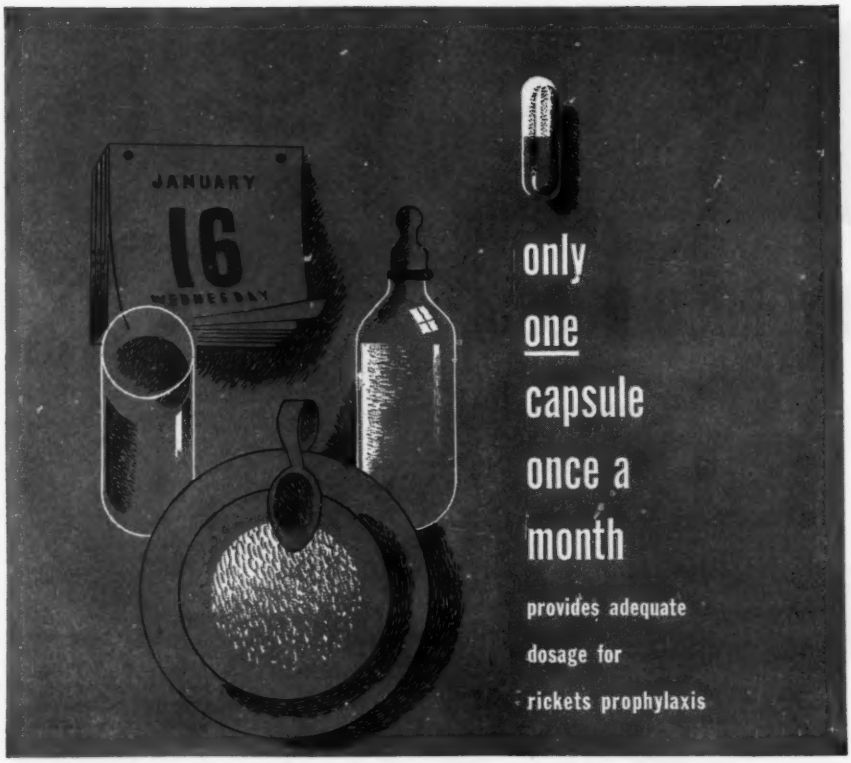

Each capsule of Infron Pediatric contains 100,000 U.S.P. Units of vitamin D—Whittier Process—especially prepared for pediatric use.

Infron Pediatric is readily miscible in the infant's feeding formula, milk, fruit juices, or water, and can also be spread on cereal.

Infron Pediatric is economical—each package contains 6 capsules—sufficient dosage for 6 months. Available at prescription pharmacies.

ETHICALLY PROMOTED

Infron
Pediatric

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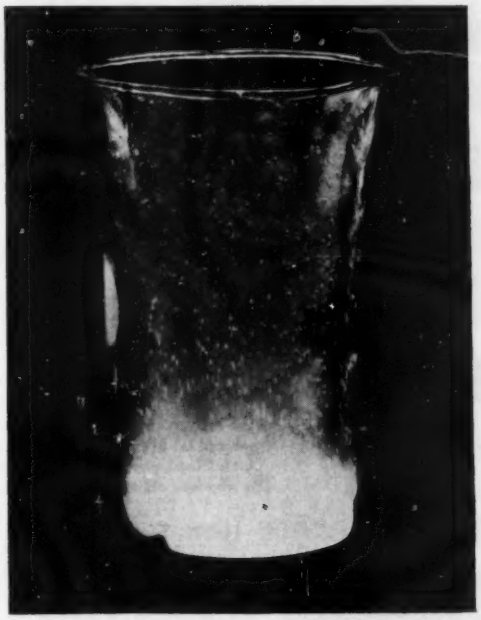
NUTRITION RESEARCH LABORATORIES · CHICAGO

A DEMONSTRATION THAT



Unretouched photo. Note how Lorophyn Jelly spreads over wall of beaker, forming continuous film.

Accepted by the Council on Pharmacy and Chemistry of the American Medical Association

Active Ingredients: Phenylmercuric Acetate 0.05%, Polyethylene glycol of mono iso octyl phenyl ether 0.3%, Methyl p-Hydroxy Benzoate 0.05%, Sodium Borate 3.0%.

Lorophyn jelly

has effective occluding properties

A quick office test offers a simple way to visualize the excellence of Lorophyn Jelly (for conception control) in providing effective barrier-action in occluding the os cervix.

Into a glass beaker, squeeze, at the rim, approximately one application of Lorophyn Jelly. Note that Lorophyn Jelly forms a continuous film on the side of the beaker and that it covers a considerable area on the bottom of the beaker. See illustration. This test provides a simple demonstration of the spreading and barrier-action of the Jelly.

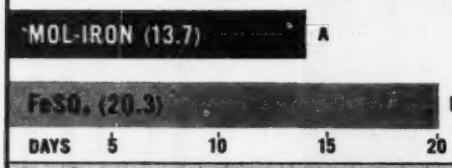
In tests, Lorophyn Jelly has killed sperm in less than one minute, even at dilutions as high as 1:20; it is non-toxic, non-irritating.*

*Eastman, N. J., and Scott, A. B.,: Human Fertility, 2:33-44.

EATON LABORATORIES Inc.
NORWICH, NEW YORK

A NEW AND DEFINITE ADVANCE

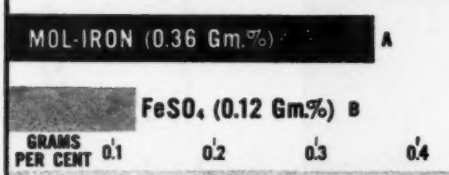
RAPIDITY OF CLINICAL RESPONSE (Days)



(A) Completely effective therapeutic response (return to normal blood values) was obtained in an average of 13.7 days of Mol-Iron therapy.

(B) Ferrous sulfate therapy *failed* to produce normal hemoglobin values after an average of 20.3 days.

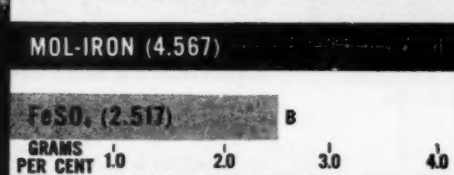
AVERAGE DAILY HEMOGLOBIN INCREASE (Gm. Per Cent)



(A) The group treated with Mol-Iron averaged a daily hemoglobin increase of 2.48 per cent (0.36 Gm. per cent).

(B) The group treated with ferrous sulfate showed an average daily gain of hemoglobin of 0.83 per cent (0.12 Gm. per cent)—a response about one-third as effective.

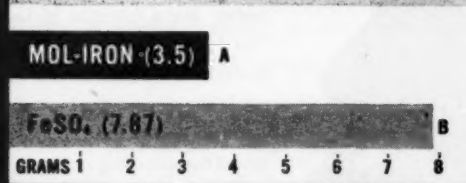
TOTAL HEMOGLOBIN INCREASE (Gm. Per Cent)



(A) The total hemoglobin increase (in an average of 13.7 days) averaged 31 per cent (4.56 Gm. per cent) in the Mol-Iron treated group.

(B) A mean gain of only 17 per cent (2.51 Gm. per cent) hemoglobin resulted in an average period of 20.3 days during which the ferrous sulfate treated group was observed.

THERAPEUTIC INTAKE OF BIVALENT IRON (Gm.)



(A) The Mol-Iron treated group received an average total of 3.528 Gms. of bivalent iron to produce the sought for result (return to normal blood values).

(B) While an average ingestion of 7.871 Gms. of bivalent iron failed to achieve an optimal response in the ferrous sulfate treated group.

The charts summarize the results of a controlled study of comparative therapeutic response in post-hemorrhagic and nutritional hypochromic anemias.

The series includes 49 cases treated with Mol-Iron and 21 with exsiccated ferrous sulfate; the results are typical of those observed in treatment of iron-deficiency anemias with White's Mol-Iron.

in Treating Iron-Deficiency Anemias

A specially processed, co-precipitated complex of molybdenum oxide (3 mg.) and ferrous sulfate (195 mg.).

White's MOL-IRON TABLETS

Available clinical evidence indicates that, in hypochromic anemia, the therapeutic response to this highly effective synergistic combination—as compared with equivalent dosage of ferrous sulfate alone—has unusual advantages:

1. NORMAL HEMOGLOBIN VALUES ARE RESTORED MORE RAPIDLY, INCREASES IN THE RATE OF HEMOGLOBIN FORMATION BEING AS GREAT AS 100% OR MORE IN PATIENTS STUDIED.
2. IRON UTILIZATION IS SIMILARLY MORE COMPLETE.
3. GASTRO-INTESTINAL TOLERANCE IS NOTABLY SATISFACTORY—even among patients who have previously shown marked gastro-intestinal reactions following oral administration of other iron preparations.

INDICATED IN: Hypochromic (iron-deficiency) anemias caused by inadequate dietary intake or impaired intestinal absorption of iron; excessive utilization of iron, as in pregnancy and lactation; chronic hemorrhage.

DOSAGE: One or two tablets three times daily after meals.

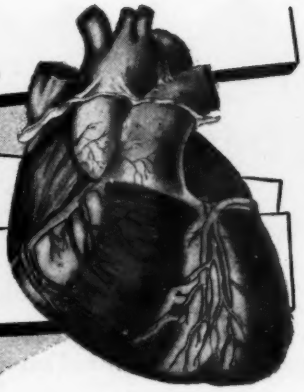
Available in bottles of 100 and 1000 tablets. Ethically promoted—not advertised to the laity.

PHARMACEUTICAL White LABORATORIES, INC. NEWARK 7, N. J. MANUFACTURERS

The chief active glycoside of Digitalis purpurea...

as effective by mouth as by vein...

virtually free from nausea and vomiting due to local action



DIGITALINE NATIVELLE presents the chief active glycoside of Digitalis purpurea, in pure, crystalline form, freed from the unabsorbable material contained in the leaf preparations.

It is absorbed quantitatively, probably directly from the stomach. Its oral administration is not beset by local irritant action—nausea and vomiting from gastric irritation are virtually never encountered.

Since it is absorbed in toto, its action is the same—and its digitalizing effect is accomplished with practically the same speed—whether it is given by mouth or by vein.

The cardiac action of one 0.1-mg. tablet of Digitaline Nativelle equals that of one 1½-gr. tablet of digitalis leaf preparations. Hence no greater caution is required when Digitaline Nativelle is used, no different instructions are needed for the patient, when initial digitalization is in the customary divided dosage. *But the side actions attending the leaf preparations—nausea and vomiting due to local irritation—need be of no concern.* The only change is that one 0.1-mg. tablet of Digitaline Nativelle is used for each of the formerly used 1½-gr. tablets or capsules of digitalis leaf.

An added advantage is that Digitaline Nativelle—completely absorbed and free from locally caused vomiting—in urgent cases permits of rapid digitalization by mouth, with an average dose of 1.2 mg. (12 tablets 0.1 mg. each or 6 tablets 0.2 mg. each) administered at one time.

For maintenance, a dosage of 0.1 mg. daily is recommended, to be increased or decreased as required.

Available in 0.1 mg. (pink) and 0.2 mg. (white) tablets (bottles of 40) and 0.2 mg. (1 cc.) and 0.4 mg. (2 cc.) ampoules (packages of 6 ampoules). Its reasonable price merits your consideration.

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Physicians are invited to send for samples, literature, and bibliography

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A Division of E. Fougera & Co., Inc.

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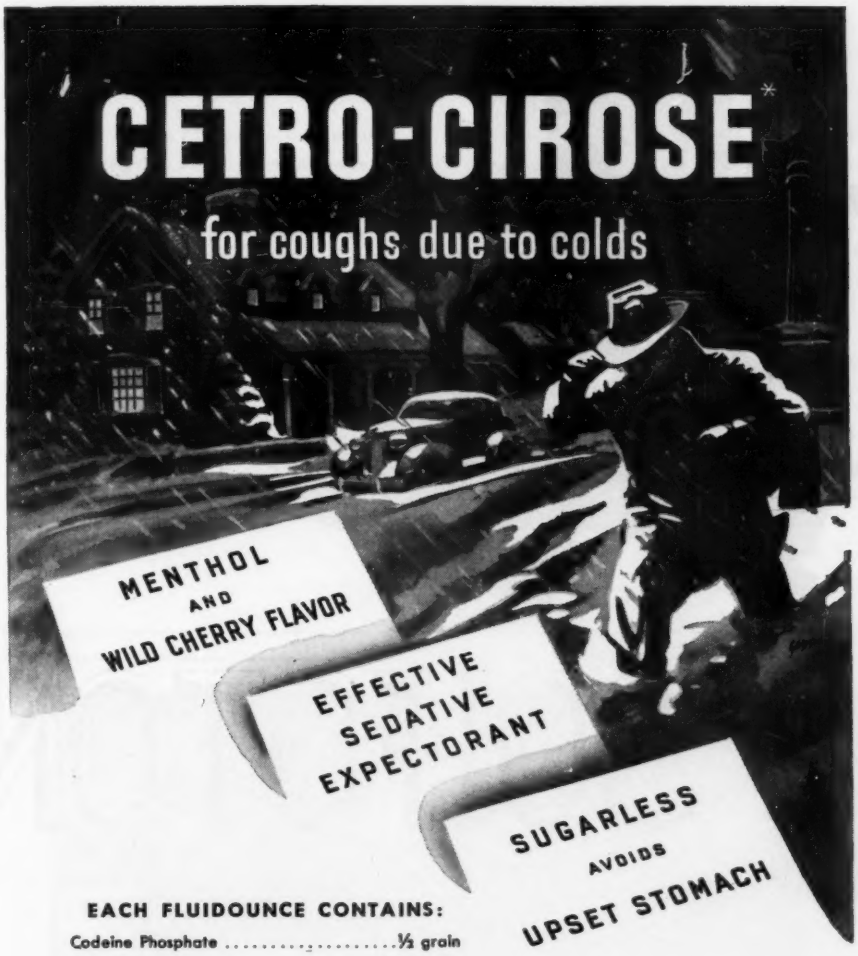

EACH FLUIDOUNCE CONTAINS:

Codeine Phosphate	½ grain
Chloroform	1½ minims
Alcohol	1½ per cent
Fluidextract of Ipecac	1 minim
Glycerin	240 minims
Potassium Guaiacolsulfonate	8 grains
Sodium Citrate	18 grains
Citric Acid	6 grains

Supplied in pint and gallon bottles

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Nerve tension expresses itself in a variety of ways—sometimes externally through the hands—more often internally by such dysfunctions as rapid or irritable heart action, wakefulness, and moderate rise in blood pressure.

Solfoton is remarkably effective in relieving such tension by providing an even, mild sedation, and by improving the detoxication of excitant amines and phenols. Each Solfoton tablet contains 1/4 grain phenobarbital and 1/3 grain of a unique colloidal sulfur. Dosage is one tablet four times a day, for at least two weeks. Solfoton is manufactured by the William P. Poythress & Company, Richmond Virginia.

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The continuance of his original conception of affording adequate medical care and personal attention, at moderate cost, to the mentally ill, has been our earnest endeavor throughout these years.

What measure of success we have attained is largely attributed to the confidence and loyalty of our many friends in the medical profession.

At this time, we wish to express our sincere appreciation for your support of our efforts and to assure you of our desire to be of continued service.

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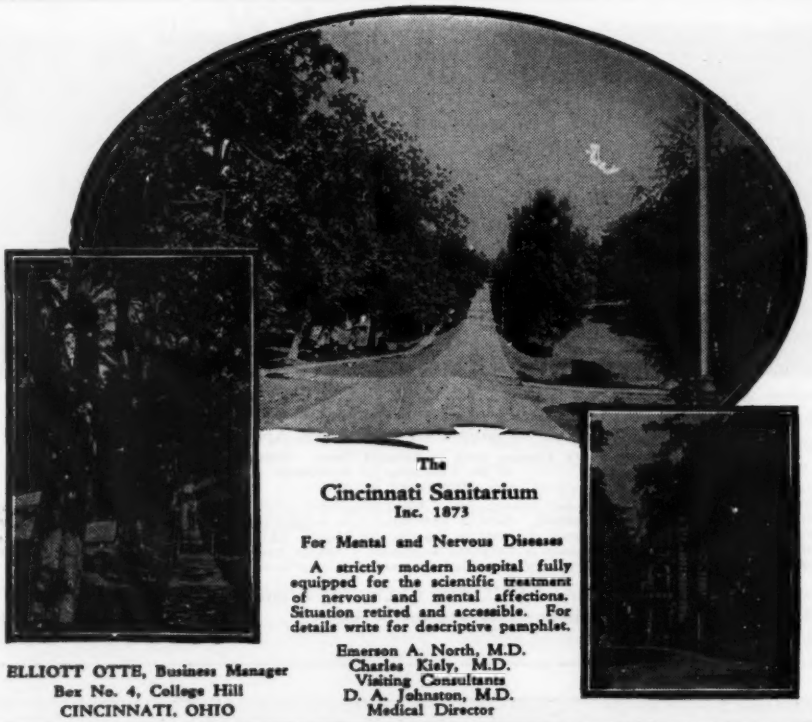

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THE TREND OF MEDICINE TOWARD SOCIALIZATION*

By E. VERNON MASTIN, M.D., M.S., F.A.C.S.
St. Louis, Missouri

For more than a generation, the ominous threat of regimentation and political control, has been suspended over our profession of medicine. During that time, many of the traditional American institutions, which had their birth in freedom, and their great growth and usefulness in the guarantees of personal liberty, have been gathered into the fold of collectivists by political action.

The typical course toward centralized control, and regimentation of individual and corporate activity, can be readily charted. Congress, in what passes at the moment for its wisdom, creates a new bureau, a board, a commission, or authority, to deal with some relatively small problem of social dislocation, economic abuse, or progressive adjustment; and the next thing the country knows, the new agency is hurling executive orders, and administrative decrees, to the four winds like an angered giant. These decisions and directives, have the full force of law. This is the fate which is imminent for medicine, unless the profession rises to the challenge of leadership, and stands united against the intrusion of the killing hand of bureaucracy, in the field of medical care. Unfortunately, there are some in our own profession, who have accepted the gilded promises of socialism. They believe, and many of them sincerely, that the individual and community good can best be served by the adoption of a compulsory system of health insurance. Many of these men occupy full time teaching positions and do not engage in the active practice of medicine. In their own thinking, they have concentrated too much on the science of medicine to the exclusion of the art of healing, that indefinable essence of the physician's effectiveness.

In the last ten years, many health insurance bills have been introduced in state legislatures throughout the country, and in the United States Congress. Between the years 1935 and 1945, twenty-seven health insurance bills were proposed in New York State alone; while in Alabama, Arkansas, Georgia, Mississippi, North and South Carolina, where the need for better distribution of medical care is much more acute, there were no organized demands for compulsory health insurance. Very obviously there are political and organizational implications in this fact. The politician seeks the favor of the organized and alien minorities in the large metropolitan centers. For some reason, the year 1945 has brought a bumper crop of compulsory health insurance proposals. At least eight states have established commissions for the purpose of studying the health needs of the people. Other states, with the full cooperation of the profession, are seeking a solution for the care of the medical indigent on a community responsibility basis. Crowning this accelerated development at the state level, was a proposal made jointly by Governor Warren of California, and the radical labor leadership of that state, for full-fledged compulsory health insurance, for all of the citizens of California. At the national level, the trend toward regimentation of the medical and allied professions, has been marked by the introduction of the three Wagner health bills. The introduction of Senator Wagner's bill in 1939 created a furore, both in and out of

*President's Address, Southern Medical Association, Thirty-Ninth Annual Meeting, Cincinnati, Ohio, November 12-15, 1945.

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The social security amendments of 1945 are a direct challenge to the medical profession, and must be dealt with on the basis that the citizens of our country need re-education on the progress which has been achieved under our present system of independent practice. However, our profession must keep in step with the changing points of view, and must attain a unity of opinion and expression, for a voluntary means of pre-paying the cost of catastrophic and extended illnesses. It is our responsibility to lead the way, to formulate a program that is acceptable to both the majority of the people and the majority of the physicians, or the politicians will surely enact some form of drastic socialistic legislation, that will be hopelessly unsatisfactory to both the profession and the public.

The problem of meeting the demands for more adequate medical care, is a combination of both economic and social issues. It is undoubtedly true, that in some localities medical service is inadequate, and a grave social issue results; but in the majority of these areas the origin of the problem itself is directly traceable to economic deficiences. If the social issues are to be met, the economic deficiencies from which they arise, must be dealt with first in a very substantial way. Most of the areas in which medical care is inadequate are distinctly rural; hospital facilities are lacking, and the economic level of these areas does not invite the highly trained professional man to bring his talent to this community. A forward step to meet this aspect of the problem, would be the establishment of diagnostic clinics and treatment centers which radiate from a centrally located general hospital. Funds for this development could suitably come from county and state taxes, or from private sources. Thus a guarantee would be established for the physician, and in no way would the sacred physician-patient relationship be impaired by the introduction of bureaucratic control.

Many of the provisions of the present social security act are desirable, and deal with the exigencies of human life in a way that is totally compatible with the principles of American democracy. These provisions are generally accepted and approved. The concept of social security is not a new one. Many European countries have indulged in one or another form of social security for generations. In 1910, the Russel Sage Foundation sent a commission to Europe to study the social insurance systems in operation in the continental countries. During the following year, Associate Justice of the Supreme Court Louis D. Brandeis, advanced the idea of compulsory social insurance against sickness, as a necessary forward step in the economic and industrial development of the United States. In 1912, the American Association for Labor Legislation created a committee on social insurance, which drafted a model sickness insurance bill, known as the "standard bill." This proposal was introduced in the state legislatures of fifteen states, but was defeated in every instance. In 1916, the federal government organized a conference to discuss sickness and unemployment insurance. At this meeting, the late Samuel Gompers, President of the American Federation of Labor, gave for the first time the attitude of the conservative labor group on this issue. Mr. Gompers said,

"The introduction of compulsory social insurance in cases of sickness, or compulsory social insurance in cases of unemployment, means that the workers must be subject to examinations, investigations, regulations, and limitations. Their activities must be regulated, in accordance with the standards set by government agencies. To that we shall not stand idly by and give our consent."

For about a decade, the alien-minded minority sponsoring compulsory health insurance and wide social security provisions subsided, and nothing of consequence was heard of the movement until 1932, when the Committee on the Cost of Medical Care, made its final report on a study that was begun in 1927. This report renewed public discussion of the problem. Other agencies, such as the American Association for Social Security, have continued to press the issue, both at the state and national levels. This organization alone has instigated the introduction of more than 100 bills in the legislatures of 20 states. In every instance these bills failed, until in 1942, the state of Rhode Island adopted a modified sickness indemnity amendment to its unemployment compensation law.

A definite result of this repeated discussion and clamor for better distribution of medical care, has been the stimulation of voluntary prepayment programs. Commercial insurance underwriters have extended both the scope and

the volume of health coverage in industry, and in recent years physician-sponsored, non-profit pre-payment plans have expanded widely. In the brief time since Blue Cross Plans were established, they have gained an enrollment of more than eighteen million persons, who are now insured against the cost of hospitalization.

The critics of the medical profession, and the advocates of a compulsory health insurance system, continually clamor about the need for better medical care. Seldom do they mention the fact, that economic conditions, geographical location, and personal requirements, vary so greatly that the question of better medical care is always relative. However, on the basis of years of scientific study and research in the field of medical care requirements and the economic aspects of medical care, the National Physicians Committee for the Extension of Medical Service, has repeatedly revealed that there are wide differences in the needs of the agricultural Southern states, and the highly industrialized states of the North. Equally dramatic differences exist between areas which have large urban populations, and those which are distinctly rural. On November 8, 1944, these facts were emphasized by Dr. Evelyn Burns during a conference held in New York City, to discuss the practicability of a national compulsory health insurance program. Dr. Burns will be remembered as the principal author of the "Report of the Committee on Economic Security," in which a National program of health insurance was advocated. Dr. Burns said,

"No one program will provide a solution to this highly complex problem of providing the most efficient medical care for all of the people. It will take many plans effectively coordinated to achieve this result. No one plan can bring about a Utopia in the distribution of medical care."

On November 27, 1944, the National Physicians Committee brought together competent representatives of the medical profession and the heads of insurance and industry, for an extensive review of the distribution of medical care, and for a discussion of the available facilities for meeting this problem on a voluntary basis. During the conference it was very clearly shown that the development of a program for the voluntary distribution of medical care could be adequate for the maximum needs, and that this could be developed practically within the existing framework of our present medical practice.

At no time in our national history has a purely individual activity been directly institutionalized. In each instance, there has been an intervening stage, a period in which the problem hangs in the balance, and during which public opinion makes up its mind one way or the other. It is generally agreed that the distribution of medical care is now in this period of suspension. Public thought and opinion on this subject is fluent, and is willing to listen to both the advocates of revolutionary measures, and to those who propose an evolutionary process of development. During this period, millions of people will be advised what socialized medicine will allegedly give them, but seldom will they be told what the system will take away. Physicians are aware of all of the evils inherent in political medicine, and must lead in educating the masses. With equal energy the profession must experiment broadly, and assist in every way possible, to extend insurance systems that will bring to the people the protection which they deserve.

If the individual private physician will give the voluntary plans the support that they merit, they will surely succeed, but if the rank and file of the profession fails to do its part, we must accept compulsory governmental health insurance as a foregone conclusion.

The task is great, but the rewards are greater. We must win this fight for the people.

VIEWS AND REVIEWS*

By J. W. JERVEY, JR., M.D.
Greenville, South Carolina

It is proper to say something today in gratitude to our friends in service and relative to our recent deliverance from the most inhuman forces of evil and destruction. A famous soldier said "A man may manifest and communicate his joy, but he should conceal and smother his grief as much as possible."[6] We will agree with this

*Chairman's Address, Section on Ophthalmology and Otolaryngology, Southern Medical Association, Thirty-Ninth Annual Meeting, Cincinnati, Ohio, November 12-15, 1945.

in principle, and very likely where merely personal feelings are concerned it should ideally always be observed. Occasionally, however, there comes the opportunity and desire of expressing one's love and yearning for mankind in general and at such a moment there is the greatest justification for losing one's self in a multitude of emotions.

On August 14, 1945, at 7:00 p. m., we heard that the war was ended. At that moment there came over me several different emotions, all of which were individually and simultaneously felt. There were tears of bitterness, sorrow, and grief because of the untold suffering past, present, and yet to come. There were tears of gratitude for the goodness of God and the coming of a measure of peace with the cessation of much of man's inhumanity to man. There were tears of hopefulness for the future dispensations of an all wise Providence and the lasting improvements which must and will ensue in human relationships and attainments. There is no shame in speaking of these things for they were real and deeply felt, stemming from the very heart and soul, and a guess is hazarded that many of you were overcome in the same way and are better men because of it.

> "God, what a world if men in street and mart
> Felt the same kinship of the human heart
> Which makes them in face of fire and blood
> Rise to the meaning of true Brotherhood."
>
> *Ella Wheeler Wilcox*

There is perhaps nothing in life so all important as the love of one man for another, unless it be a man's love for his God. That is just another way of stating the two great commandments, and might constitute a text for countless sermons. However, there is no intention on my part to preach. On the other hand it is not necessarily my duty as Chairman to read a scientific paper, and so a brief discussion has been prepared which may prove interesting. Before it is concluded mention will be made of one or two somewhat touchy problems, and while you are not asked to agree with me, you are requested to think with me, bearing in mind that there is no desire on my part to stir up controversy, nor to create other than an atmosphere of kindly tolerance, good will, and fellowship. But first let me tell you a story.

There is, I believe, nothing desirable to which a man cannot attain provided he is willing to work and sacrifice enough for it. This opinion is the fruit of experience. Please excuse for a little the use of the personal pronoun, and for my indulging in a bit of autobiography which, while not particularly creditable, for in some ways it appears quite stupid and stubborn, may serve to illustrate a point.

For years as a youth I had assumed without much thought that I would be a surgeon as my father had been. However, as the time approached for entering medical school it seemed to become less and less desirable. I was fearful of all those things connected with the study of medicine which are thought so dreadful by the uninitiated but become so relatively simple and natural in their accomplishment. Finally it got to the point where, in my imagination, a medical education was impossible for me. No one who has not experienced this feeling can picture the torturing conflicts of emotion and indecision which gnawed at the very vitals of heart and soul. I could and would do anything else, but I could not study medicine. I turned to other possibilities including the ministry, but there was no voice from heaven, and always after careful reasoning I came back to the sound conclusion that if I did not turn diffidence into temerity I would forever be a failure.

So with more determination than courage, and with more obstinacy than virtue my medical education began. Naturally, the further I progressed the more fascinating it became and when I was through two things were mine. I not only had a profession of which no one could deprive me, but I was psychologically my own master.

Now in medicine as in every other business or profession, there are many, many problems, and it appears at times that some are quite insoluble, but none is insurmountable in the presence of sufficient determination.

Individual difficulties occurring in private practice sometimes seem more than we can bear, but the answers come and resolution follows when conscientious application and intelligent thinking are employed along with a healthy disregard of all comments by our patients concerning our colleagues.

We are faced with trying to help in every

possible way the physicians who are returning from service. Here there will be some embarrassing incidents, for while we would return to each home-coming physician all of his patients whom we have seen in his absence, a few will prefer to remain under our care and it is their privilege to do so if they wish, provided there has been no direct reference to us from their former physician. Tact and patience will be required if there is to be a minimum of misunderstanding, hard feeling, and criticism. We must have faith enough to believe that where there is a will there is a way, and it must be our uniform wish and endeavor that the least possible inconvenience accompany our veterans' return to their former places in medical practice.

In my office identifying marks have been placed on records of those who for any reason have come in because of the absence of some other physician in service, and sincere efforts are made to persuade them to return to their former doctor upon his return. Some physicians have doubtless established a better system.

One of our problems too little discussed with equanimity and kindly thought concerns the Negro physician. What can we do to help him and through him the people that he serves. Might not some way be devised whereby he may benefit by our wider medical experience and more effective scientific and educational facilities? He might gain greatly, and we would lose nothing if he were given the opportunity to listen to our scientific discussions. Several intelligent, respectable, and respectful Negro physicians are known to me. Occasionally I have consulted with them to our mutual satisfaction. Please do not misunderstand. "We should give to backward people all the help possible. But in doing so it is not necessary to belittle our own racial dignity."[1]

It is a thought provoking fact that many of our finest citizens, when the Negro question is mentioned, immediately assume that an argument for so-called social equality is implied. This, of course, obviates any and all rational discussion. Social equality can neither be grasped nor given. Indeed it is as nonexistent between white and white as between white and colored, and it can arrive, if at all, only through ages of graceful living and eons of cultural development. In this connection it is my opinion that the blatant and inflammatory Negro press does not voice the sentiments of the majority of the group it pretends to serve.

Nevertheless the Negro is here, and is in a most unfortunate position by reason of many physical and mental characteristics with which all present are quite familiar. It is, therefore our responsibility to see to it that he is treated fairly and justly. Such a plea was made as early as 1855 by Governor Adams in a message to the General Assembly of South Carolina.[2] Let us not bolster the opinion of the Negro scholar DuBois that by virtue of his assumed superiority the Southern white man is not constituted to assist the Negro in evolution to a higher standard. Certainly, if only in our own interest, the Negro deserves more attention and consideration than do our animals which we assiduously help, and rightly so, through our humane societies. Think on these things. They are difficult but challenging, not alone to the southerner, but to all men.

The topic most discussed by the medical profession at present is that of so-called socialized, state, or legislated medicine. Many physicians, as soon as this subject is broached immediately get hot under the collar. Why? Let us examine the facts.[3]

If proposed legislation has done nothing else it has made the medical profession sit up and take notice of needs in general as regards medical care. We must all assume the obligations and take advantage of the privileges which we knew were to be ours when we undertook the study of medicine. Reference here is to the entirely inadequate care of the indigent in well organized communities where all too frequently busy practitioners are unwilling to give of their time and experience to clinic work. This is not hearsay, but an indictment brought as the result of personal knowledge.[5] The aim of the government is to furnish adequate medical care. The challenge to our profession is to meet the need without the necessity for coercion. Much thought has been given to this matter, and plans abound. Many of them are good. My beloved state of South Carolina has come forward with a ten-point program which has received national attention and commendation.

There was much argument last year over the

Wagner-Murray Bill. There will be much again this year over Senate Bill No. 1050. Yet how many of the physicians who argue so loudly are accurately informed as to the contents of these bills? To begin with there is nothing in S-1050 that remotely attempts to force anything upon physicians nor are all of its objectives wholly diabolical. On the contrary there are many things in the Wagner-Murray-Dingle Bill which are exceedingly desirable and therefore commendable. Surely we are in need of better and greatly extended health services, better housing and sanitation, and better hospital facilities. That is not to say that passage as it now stands is advocated, but it has its points.

As I see it, beyond the deplorable fact that it will further increase taxes, there are three main objections to the bill. The most important of these is that there is in it absolutely no provision for the care of the indigent between the ages of 18 and 65 years. To me this means that the bill was essentially political or selfish in origin. If proponents of the bill care to argue it was intended that the privilege of caring for the poor be left as heretofore with local institutions and physicians, then the care of those who can pay might well be left there also.

Mr. Wagner naively draws a fine distinction[4] in referring to the 8 per cent of our personal incomes necessary to ensure the success of this program as a social security premium and not a tax. If there is a practical difference it will take a high powered microscope to detect it.

The second objection is that medical insurance is placed on a compulsory and not on a voluntary basis. Very sensibly the federal government offered a life insurance policy to soldiers and sailors in service, but also very wisely they were not required to take it. Why then should a man be forced to take out a medical insurance policy he does not want? For the good of the whole? Impossible, for the indigent are not provided for and only those who have jobs may receive benefits.

Thirdly, contrary to Mr. Wagner's assurances,[4] there is in the bill definite restriction on the choice of physician by the patient, and he may have to pay more than he should to obtain the service he desires. For example, John Jones is a patient of yours. Rightly or wrongly he believes that you are the "best doctor in the whole United States." You do not take on this government work, but when little Johnny gets sick his father wants you to take care of him and pays for it. Mr. Jones has been forced to pay twice, once from his pay envelope for something he did not want and would not have, and again from his purse for the service desired and obtained.

Furthermore, by the terms of this bill you as a specialist can be consulted only by request of the patient's family physician! He will be loath to give up his small fee in your favor and will more often than he does today unfortunately try more and more to manage conditions the best treatment for which he is not in a position to know.

So we have before us this matter of medical care, a tremendous problem. How shall we attack it? First we must think clearly and carefully about it, and each must lend an idea or hand where possible in its solution. In addition we must keep cool and not jump frantically to false conclusions as to what somebody is trying to do to the medical profession. Rather we should give much thought and attention to what the medical profession is doing to itself.

"The truth is this:" and I quote again from Robert E. Lee:[6]

> "The march of Providence is so slow and our desires so impatient; the work of progress is immense and our means of aiding it so feeble; the life of humanity so long, that of the individual so brief, that we often see only the ebb of the advancing wave and are thus discouraged. It is history that teaches us to hope."

This discussion does not presume to dictate in any instance; rather it has been my desire to arouse interest or stimulate thought. All too elusive answers are far from clear, but to find them this suggestion is made; we must constantly undertake the apparently impossible and we will frequently find that ways and means become available when a problem is approached with an open mind and with a warm heart. Nothing must ever be too hard for us to try. The more difficult a thing seems the more effort must be exerted to remove all obstacles to a satisfactory solution. When we have done this we shall not have failed. And what will we have? A bit of contentment, a measure of peace, the

love of our fellow men, and what is infinitely more important, love for our fellow men.

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DEVELOPMENTS IN THE MEDICAL COLLEGE OF ALABAMA*

By Roy R. Kracke, M.D.†

and

J. W. MacQueen, M.D.‡

Birmingham, Alabama

The Medical College of Alabama was founded by unanimous vote of the Legislature in 1943, at which time there was appropriated one million dollars for the building of a new medical school, and $366,750 annually for its maintenance. The bill also provided that an annual scholarship of four hundred dollars be made available for one resident from each of the sixty-seven counties in the state. The bill also created a commission of nine Alabama citizens headed by the Governor to locate, to build and equip the Medical College, and further stipulated that the college should be a division of the University of Alabama.

After many months of careful study, planning and visiting many medical schools throughout the country, the commission located the institution in Birmingham. The Alabama cities that endeavored to secure the medical school included Mobile, Birmingham, Montgomery and Tuscaloosa, the latter being the home of the University of Alabama.

The location of the school in Birmingham was based primarily upon the fact that it is the most densely populated area in the state affording, therefore, a large volume of clinical material. Secondly, that there already existed in Birmingham excellent, well organized hospitals that could be used for teaching purposes; thirdly, upon the availability of large numbers of potential clinical faculty; and fourthly, upon the evident desire of the people of that area to have the medical school in the city, this being emphasized in a practical way by the donation of a block of downtown property by the citizens of Jefferson County.

The Medical College was created because of acute need for more physicians throughout the state of Alabama, particularly in the rural areas. Alabama has not trained physicians since 1920, when the Medical College was discontinued in Mobile. This school had been founded in 1859 and in 1897 became the Medical Department of the University of Alabama. It was forced to close in 1920 because of a lack of legislative support. At that time the two-year School of Basic Sciences was established in Tuscaloosa on the University campus. The School of Basic Sciences has served the state for twenty-five years, and is now incorporated in the new Medical College of Alabama in Birmingham. Also, the Birmingham Medical College was organized in 1894 and was closed in 1915. It was one of the older proprietary schools. The Medical College of Alabama in Birmingham at this time, then, takes over a continuous program of medical instruction that was begun eighty-six years ago. The alumni of the old school at Mobile and the old Birmingham Medical College and the School of Basic Medical Sciences have been made alumni of this new institution by action of the Board of Trustees.

The active development of this Medical College dates from August 1, 1944, approximately fifteen months ago, at which time the senior author was appointed Dean of the School.

The first study of the clinical facilities in the Birmingham area revealed a unique situation in that Jefferson County owned and operated two separate hospitals located wall to wall. One of these was the old Hillman, or Charity Hospital, an institution of approximately four hundred beds, serving the indigent of the county.

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*Read in Section on Medical Education and Hospital Training, Southern Medical Association, Thirty-Ninth Annual Meeting, Cincinnati, Ohio, November 12-15, 1945.

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‡Administrator of Hospitals, The Medical College of Alabama, Birmingham, Alabama.

The other was the relatively new eighteen-story Jefferson Hospital built entirely with Federal funds under a forty-five per cent P. W. A. grant, with a bed capacity of approximately six hundred patients.

The Governor's Commission entered into an initial contract whereby all of the facilities of the Hillman Hospital and Out-Patient Clinic would be used by the University for teaching purposes, with full authority granted to the University in staff appointments, employment of personnel and in determination of policies. It became obvious, however, that the new Jefferson Hospital would offer a much more satisfactory facility as a teaching institution. Therefore, negotiations proceeded over a period of several months leading finally to the donation of both institutions to the University of Alabama. The Medical School, therefore, acquired by gift its teaching hospitals, including both the Hillman and Jefferson and associated properties, which include a relatively new out-patient building, a nurses' home and a tuberculosis clinic building. All of this occupies approximately one block of downtown Birmingham property. The total bed capacity in both institutions is approximately nine hundred. Hospital admissions are sixteen thousand yearly and out-patient visits number approximately 5,000 per month. It is believed, therefore, that the clinical facilities are entirely adequate for the conduction of a first-class teaching program. Furthermore, the contract with Jefferson County provides that the county shall hospitalize its indigent patients in the institution on a per diem basis, the rate to be established from year to year by negotiation between the University and the County, or by a board of arbitration set up for that purpose.

In the acquisition of the hospitals, it was necessary for the University to assume an outstanding debt on the Jefferson Hospital, the principal of which is one million two hundred thousand dollars, with the bonds being held by the Reconstruction Finance Corporation. The interest and principal payment on this indebtedness at the present time is approximately seventy-five thousand dollars a year, which necessitates the hospitalization of approximately two hundred and fifty private patients in order to carry these charges. At the present time the hospital population is about equally divided between pay and indigent patients. Negotiations have been in progress and continue for the relief of this indebtedness. It is anticipated that this will be accomplished with funds from the state treasury.

Further study of the hospital situation indicated the desirability of combining the two institutions, which has been done within the past year. At this time, therefore, all patients are housed in the new Jefferson Hospital, these including pay and indigent, colored and white, with segregation maintained on a floor by floor basis. The old Hillman Hospital, therefore, constitutes the temporary quarters of the Medical School at present, including the administrative offices, classrooms for nursing education, student laboratories, blood banking operations, the Spies Clinic, the Department of Obstetrics for colored patients, medical school offices for clinical staff and the medical school library.

It was considered advisable many months ago for the school to proceed with its development and not await the end of the war to build a new medical school. This decision was prompted largely by the fact that the state needs physicians badly, and also by the fact that public opinion in the state of Alabama is so solidly behind the medical school development that it would have been extremely unwise to retard the development in any way. Therefore, the installation of the school and its beginning operations have been carried out in a particularly difficult time during the last of the war period, when it was extremely difficult to carry on alterations in the physical plant and to obtain suitable faculty. Nevertheless, during the past year three floors of the Jefferson Hospital have been completely remodeled to house the pre-clinical divisions, formerly located at Tuscaloosa. These have been moved from Tuscaloosa within the past few weeks and are now in full operation. The departments of pathology, bacteriology, anatomy, physiology and pharmacology, biochemistry, and medical library occupy the sixth, fourteenth and seventeenth floors of the Jefferson Hospital. Therefore, there has developed a unique situation in that the pre-clinical divisions of the school are sandwiched between floors of clinical material. These changes have been made at an approximate cost of two hun-

dred fifty thousand dollars, which has been obtained mainly from the first yearly operational budget of the medical school, leaving the original building fund intact.

Instruction to the first junior class was begun on June 4, 1945, and this class is now beginning its final quarter of the junior year. The junior class consists of only twenty-two students, these electing to transfer to the Birmingham school rather than to other institutions throughout the country. Our present sophomore class, which numbers fifty-one, has just completed the first semester of that year, and the freshman class of fifty-two began instruction on October 8. At the present time, therefore, there are three full classes under instruction in the Birmingham plant.

Practically the entire faculty and staff of the School of Basic Medical Sciences has been transferred to the Birmingham plant, with the notable exception of former Dean Stuart Graves, who has remained on the University campus in the capacity of Director of Admissions, with offices there for that purpose. Our freshman classes, therefore, will be selected on the University campus by a Committee headed by Dr. Graves.

The faculty of the Medical College of Alabama at the present time consists of one hundred and eighteen people, which includes thirty-eight on a full-time basis, six part-time, and seventy-four on a voluntary basis. The preclinical faculty is essentially the same as that in the School of Basic Sciences at Tuscaloosa, except for the addition of newly appointed members in those departments where additional strength was indicated.

The clinical faculty is composed mainly of voluntary teachers from the medical profession in Birmingham with the addition of a few full-time men in the various branches. Thus, at this time there are three full-time faculty members in the department of medicine, one part-time in the department of surgery, one full-time in the department of obstetrics, one part-time in the department of pediatrics, one part-time in the department of public health, and this group is being rapidly augmented. It is the policy of the institution to appoint full-time professors in certain of the clinical branches, notably the departments of surgery, medicine, obstetrics, pediatrics, and public health. Also, there is being established a full-time department of ophthalmology because of assured financial support for this work from the Alabama Sight Conservation Association.

In addition, there has been appointed a full-time professor of radiology, whose duties include the conduction of radiological activities in the teaching hospital. The professor of pathology has full responsibility for this work in the teaching hospital and it is contemplated that there will be established an associate professorship of anesthesiology on a similar basis.

The school has been fortunate in the development of its library. Since the library of the School of Basic Medical Sciences, of ten thousand volumes, was also moved to Birmingham and the institution has been the recipient of the Jefferson County Medical Society Library, another collection of approximately ten thousand volumes, these two large libraries combined with other material in the two hospitals, have formed an excellent nucleus for the new medical school library, which now has a current journal list of something over three hundred titles.

In this connection, it should be pointed out that the Jefferson County Medical Society of some four hundred members has long had its headquarters in the Out-Patient building which has been transferred to the University. Therefore, the activities of organized medicine are carried on practically within the medical school, with the finest cooperation between the school and the County Medical Society. It is our belief that all medical schools should make every effort to render service to the various units of organized medicine, and our arrangement in Birmingham in this respect is a particularly happy one.

Also by vacating a portion of our old colored division of Hillman Hospital, we have been able to provide quarters for the city, county and state health departments, which are now housed in the medical school plant. This group of some two hundred workers is proving to be a valuable addition in a teaching program and a close working relationship between the medical school and health department is now already proving very effective.

Thus, in one block, housed in a series of connecting buildings, there are the Medical Col-

lege, its teaching hospital, the out-patient department, the nurses' home, the city, county and state health departments, the Spies Nutrition Clinic and all activities of the County Medical Society. We also provide office space and facilities for the Clinic of the Anti-Tuberculosis Association, the Alabama State Society for the Control of Cancer, the Alabama Sight Conservation Association and the Alabama Commission for the Study of Alcoholism. All of this is in line with the basic policy of the institution to render the greatest possible service in all divisions of worthwhile medical activities.

In addition to the teaching hospital, two other institutions are affiliated as teaching units, these being the Crippled Children's Clinic and the Children's Hospital.

The budget of the Medical College of Alabama for the current year is approximately four hundred thousand dollars, of which three hundred and fifty thousand dollars is provided by legislative appropriation and fifty thousand dollars from student fees. A considerable part of the 1943-44 budget was used in providing temporary quarters for the school of medicine as previously described.

The organizational structure of the medical school includes the following eighteen departments: anatomy, bacteriology and clinical pathology, biochemistry, physiology and pharmacology, pathology, library, medicine (including neurology, dermatology and syphilology, and psychiatry), surgery (including neurosurgery and anesthesiology), obstetrics, gynecology, pediatrics, otorhinolaryngology, ophthalmology, public health and preventive medicine, urology, orthopedic surgery, radiology, and hospital operations.

Certain other activities of the school, such as maintenance of student cafeteria, book store and dormitories, are carried as administrative activities.

The student tuition is established at four hundred dollars per scholastic year. The policy of the school is to accept principally residents of Alabama, and this is also true of appointments of the intern and resident staff.

It is anticipated that our instructional program will undergo deceleration beginning with the freshman class entering in October, 1946. All classes under instruction at present will be carried through on the accelerated program.

The University has obtained, by purchase one-half block of apartment house structures which have been completely remodeled and serve very satisfactorily as student dormitories, with certain sections for male students, other sections for female students, and other sections for young married faculty members, interns, house officers, and so on. These dormitories house 255 people and at the present are completely occupied. This was done at a cost of approximately $350,000, which is an investment of the Athletic Fund of the University of Alabama. The students live in these dormitories under supervision of house directors, as one ordinarily sees in well-regulated dormitory systems on a university campus. It is believed that the general supervision of student life, with particular reference to moral and spiritual values, can be effectively developed in a school of medicine as well as in other university student life.

The Medical College has also acquired by purchase two additional blocks of downtown property with a view of creating a center of medical activities. These properties have been temporarily allocated to certain other institutions that either are prepared to build as affiliated units, or have prospects of doing so. These activities include a university center for adult education, for which funds are practically available, a new building for the city, county and state health departments, for which funds have been provided, and a new nurses' home. Also, the Crippled Children's Clinic is prepared to build a new institution in the immediate future and other units are anticipated in the course of the next few years.*

The basic policy of the Medical College of Alabama is to render the greatest possible service to the state and all other considerations are

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**Author's Note*—Since this paper was read a new four million dollar five hundred bed Veterans' Hospital in the Medical Center has been authorized.

secondary to this. It is the chief objective of the school to train more physicians and better physicians for service within the state. Over ninety per cent of our undergraduate student body, intern and resident staff, are residents of Alabama at this time.

Realizing that a modern medical school does not fulfill its full obligation unless auxiliary personnel are also trained, we feel that our school of nursing will undergo considerable expansion. It is not likely that we shall attempt to do this on a so-called university level, since we believe that what Alabama needs is not nursing administrators, but nurses. We plan to institute auxiliary schools for laboratory technicians, x-ray technicians and nurse anesthetists because our state needs these people as much as it needs physicians. At the present time a class of fifteen laboratory technicians is in training.

It is also the policy of the school to offer every facility to the physicians who practice medicine in Alabama with particular reference to postgraduate training and to the large number of discharged veterans coming in every day. The problem now is particularly acute. We have plans under way whereby it is hoped that our staff during the month of January will provide a month of postgraduate training in the form of lectures, clinics, demonstrations, ward rounds, in the various branches of medicine, surgery and obstetrics, particularly for discharged medical officers.

Also, it is the policy of this school to encourage our graduates to practice medicine in Alabama. We hope to develop a system of rotation whereby our house staff may serve a certain part of their training period in small but carefully chosen Alabama hospitals throughout the state. It is possible that such plans will be effected beginning next March. It is our desire to emphasize the benefits to young physicians who render service in the smaller cities of the state. We are aware of course that the entire problem of medical care is not solved by this alone and that many other factors govern the distribution of physicians; but at least we shall make an attempt to see that our students are inculcated with a desire to render service in those areas where service is most needed.

If the state of Alabama should in the years to come develop a state-wide system of smaller hospitals, as has been proposed from time to time, then we would hope to utilize such hospitals in a system of medical education, and we believe that the institution at Birmingham will be prepared to accept its responsibility in that field when such opportunities develop.

It is our hope that the teaching hospital of the Medical College of Alabama will become a state institution devoted to the care of the indigent of the state and not only those of Jefferson County, to which its facilities are wholly devoted at present. In Alabama this can be done at a very reasonable cost since the various counties can hospitalize their indigent patients in the teaching hospital on a per diem basis as is now being done by Jefferson County. This would require a very moderate legislative appropriation to fully maintain the teaching hospital.

The Medical College of Alabama does not propose any radical innovations in educational procedure, nor drastic revisions of the accepted medical curricula. We feel that we are on much safer ground in following the older conventional, well-tried patterns.

Since we are a part of a state institution, supported entirely by state funds, we should not only render the widest service possible to the people of the state, but it is a prime responsibility to maintain the confidence and good will of our people, including the medical profession and the political groups in Alabama. The institution thus far has been successful in this respect since it is doubtful that a medical school has ever been established that enjoys the enthusiastic backing and the statewide confidence and support of our citizens as does the Medical College of Alabama at this time.

It appears to us that it is a responsibility not only of our school but other medical schools to maintain such relationships, and in order to do so it occurs to us that the medical school of the future should concern itself with practical medical problems of its area and not permit itself to become too secluded within an academic cloister.

POST-WAR PLAN FOR TRAINING NAVAL MEDICAL OFFICERS*

By ALPHONSE McMAHON, M.D.†
Washington, D. C.

The Navy Department established the V-12 Program in March, 1943, effecting the enlistment and assignment of personnel to active duty in a training capacity on July 1, 1943. This program was established in order to assure a constant supply of medical students, deferring them from Selective Service. This assured a continuous flow of medical officers into the Naval Reserve for assignment to active duty for naval intern training or to active duty upon the completion of civilian training. There were approximately 5,000 ensigns (H)(P) USNR, serving on inactive duty as medical students who were automatically enlisted in Class V-12 upon the submissions of resignations from their inactive reserve status. This was a voluntary procedure and approximately 99 per cent of all ensigns (H) (P) USNR, (medical) were enlisted in the V-12 medical program.

At the present time there are approximately 6,800 V-12 medical students enrolled in the Navy College Training Program. The Navy Department, on September 1, 1945, informed all medical schools it was the intention to place all V-12 medical students on inactive duty upon the completion of the present semester. By March 15, 1946, all V-12 medical students will have been placed on inactive duty. These students will then be required to pay all expenses, tuition, and so on, as the Government is no longer responsible for any financial obligations incurred by these students. The records indicate 3,616 V-12 medical students have been graduated from the program and presently hold appointments as lieutenants, junior grade, (MC), USNR.

It is the intention of the Navy Department to continue to defer from call to active duty V-12 medical students until such time as they have been graduated, have been appointed as lieutenants, junior grade, (MC), USNR, and have completed civilian intern training. V-12 graduates who qualify for Naval internships will be ordered to active duty upon the completion of intern training, up to and including six months after the termination of the present national emergency. Assignment to active duty after that date must be on a voluntary basis for reserve officers.

The 9-9-9 program was accomplished by the Procurement and Assignment Service for physicians, dentists and veterinarians in cooperation with the Surgeons General of the Army and Navy. In brief, the function of the 9-9-9 program was predicated on the assumption that an insufficient number of civilian interns would be available unless the Army and the Navy agreed to defer from call to active duty a certain percentage of all medical officers graduating in the military training programs. The Surgeons General of the Army and the Navy agreed to recommend the deferment of one-third of all reserve medical officers completing nine months of intern training to serve as junior residents in civilian hospitals. Under this program, one-half of the one-third interns referred to were recommended for an additional deferment of nine months in order to serve as senior residents in civilian hospitals. At the present time there are 766 Naval Reserve medical officers serving junior residencies and 135 serving senior residencies in civilian hospitals.

It is anticipated by the Bureau of Medicine and Surgery that the 9-9-9 program will be revised in the near future. It is believed that under this revision reserve medical officers will become available for active duty after they have completed 12 months of intern training. In this regard, it may be necessary to extend the deferment of reserve medical officers for the period April 1, 1946, until July 1, 1946, as an overlapping period, the normal internship of 12 months to begin on July 1, 1946. If this is accomplished, V-12 medical students graduating on or about April 1, 1946, would be deferred from call to active duty until July 1, 1947. It is the understanding that all civilian hospitals will revert to the 12 months intern schedule commencing July 1, 1946. It is the intention of the Navy that the present intern schedule of nine months be modified to the pre-war sched-

*Read in General Session, Southern Medical Association, Thirty-Ninth Annual Meeting, Cincinnati, Ohio, November 12-15, 1945.

†Commodore, Medical Corps, USNR, Bureau of Medicine and Surgery, U. S. Navy Department, Washington, D. C.

ule of 12 months of intern training. It is anticipated that this will be effected April 1, 1946.

Post-graduate medical education in the Navy is recognized as being an essential feature of post-war plans. To maintain the high standards in the practice of medicine, this training is of paramount importance to men who have received their medical education under the accelerated instructional plan of medical schools and hospitals. Furthermore, specialization has been recognized in the Navy and opportunities to become proficient in the various medical specialties will be provided for the officers in the Medical Corps.

Realizing that every Naval hospital cannot be set up as a center for post-graduate medical education, eight Naval hospitals will be maintained as centers for post-graduate medical training and services will be organized in these hospitals similar to the arrangements for resident training in universities and civilian hospitals. In addition to the regular staff of medical officers in these eight educational centers, certain outstanding specialists who are members of the Naval Reserve will be invited to serve on the staffs as consultants for problem cases but also will organize the teaching of their individual specialties with ward round seminars and departmental meetings to further the teaching program.

At the present time, these post-graduate training centers are being planned at Chelsea, Massachusetts; St. Alban's, Long Island, New York; Philadelphia, Pennsylvania; Bethesda, Maryland; Great Lakes, Illinois; Long Beach, Oakland and San Diego, California; and Seattle, Washington. All centers will not give training in all the specialties. The designation of a center for instruction in a given specialty will depend upon available clinical material and competent instruction. Post-graduate facilities of civilian teaching institutions will be utilized also for the instruction of naval medical officers. In view of the fact that civilian residences and fellowships are designed primarily to meet the requirements for certification of special practice, these requirements are to be met at the training centers. The availability of veterans as patients in these training centers will increase the clinical scope and allow for better over-all teaching. These training centers, we are confident, will offer post-graduate instruction comparable with that now given in universities and other centers of medical education.

A head of the training program is to be set up in the Bureau of Medicine and Surgery and, in addition, an advisory committee composed of consultants in the various specialties will help organize and direct the supervision of the teaching programs in these centers. These reserve consultants will be selected by, and act as consultants to, the Surgeon General while serving in this capacity. It is possible, with this type of organization, to maintain these centers so that the courses can be coordinated, allowing the transfer of officers from one center to another without interrupting the over-all program of their training.

Training of younger men in the Naval Medical Corps will embrace a certain period, during which time the medical officer will be assured of his internship and one or two years of resident training. In view of the fact that sea duty is necessary to maintain the Medical Department afloat, this must be included in the prospectus. During the customary two years at sea, one year at least will be spent either on a hospital ship or duty at some overseas base, and one year will be served aboard battleships, cruisers and other vessels. Following the tour of sea duty, the young doctor will return to one of the training centers for at least two years intensive work in the specialty which has been recommended by the Advisory Board following his request for further training.

A word should be said concerning the sea bases at which hospitals are maintained and where courses of instruction will be carried out as far as possible. We will have bases in the Hawaiian Islands, the Marianas, the Philippines, Canal Zone, Puerto Rico and Guantanamo, Cuba. In addition to these, there will be four hospital ships on which training will be given.

Complete records of attendance upon these courses will be maintained at the Bureau of Medicine and Surgery for the purpose of giving credit for work completed and for assisting in planning and arranging for the courses. Thus, a young medical officer who enters the Navy will immediately enter upon a post-graduate

course covering a period of five years. Instruction will be provided in all of the American Board specialties. The courses will be planned in the Bureau of Medicine and Surgery and definite time will be allotted for participation in these courses. When it is necessary for the medical officer to fulfill his duties at sea, he will not be expected to serve longer at sea than is set up in the plan. Upon completion of duty afloat, he will return to one of the Centers for further instruction in the specialty which he has requested and which has been approved by the Board.

It is conceivable and probable that places for instruction will not be available for all the members of the Medical Corps. The officers, therefore, will be selected according to their aptitude, their industry and their interest in the specialty which they have chosen. In setting up these centers, opportunities will be given to men who prove themselves worthy of further instruction, and every effort will be made to provide them with courses of instruction which meet the requirements of the different medical organizations and specialty boards and equal to or superior to those they could obtain in civil life.

RECONVERSION OF THE DOCTOR FROM WAR TO PEACE*

By WALLACE H. GRAHAM, M.D.†
Washington, D. C.

It is a heartwarming privilege to be here with you, my good friends and colleagues. This is an historic occasion and it was most gracious of your President to have asked me to participate in this Victory Meeting. The President has asked me to bring you his greetings and best wishes for a most successful meeting.

Many of you; in fact, the majority of you, are undoubtedly wondering who I am, where I came from, and what business I have being in the position I now hold. I shall try to answer these questions.

Actually, I am merely carrying the torch which was given to me with a flying start by my good father who is a practicing physician in Kansas City, Missouri. He has been a friend of President Truman's and his family for many years. I first met the President, casually, as a reserve officer, having heard him speak on several occasions and having had the pleasure of dining with him at one time.

After my graduation, my internship and residency in pathology, I took considerable postgraduate work in several of the European universities. Then I returned to the United States for further work in our American hospitals and later to my home in Kansas City where I began practicing with my father, and was also associated with the Missouri-Pacific Railroad hospital staff.

In 1941 war seemed inevitable and I entered the service as a First Lieutenant, April 4. My jobs have been various and I can assure you that they were not especially picked and some were none too enjoyable. However, we in the Army developed the philosophy that there was a big job to be done and each individual simply fitted in where he was placed. Six months previous to the invasion of Europe found me a Lieutenant Colonel and Chief of Professional Service in the 24th Evacuation Hospital. We landed on Easy Red, Omaha Beach on D-4.

I will not go into any sordid details except to say that a year ago we lost some of our most valuable personnel, officers, nurses and enlisted men, by terrific shelling when we were with the 101st Air-borne in Nijmagen, Holland; I, myself, was just beginning to move around well, having recuperated from a wound received a few weeks previously.

The war proceeded as you all know, and the first that I had any indication of the presidential appointment was when orders were received by me in Stuttgart, Germany, to report immediately to Potsdam, where at that time I was told I was to be the Personal Physician to the President of the United States. Any one of you would have about the same reactions that I had then. To me it was a great thrill, although I was almost overwhelmed with the enormity of my task and my responsibilities. I have found my professional duties of caring for the President and his staff most interesting and this, combined

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*Address, General Session, Southern Medical Association, Thirty-Ninth Annual Meeting, Cincinnati, Ohio, November 12-15, 1945.

†Colonel, Medical Corps, AUS, Physician to President Truman.

with a surgical teaching appointment at George Washington University, work at Johns Hopkins and Walter Reed Hospitals keeps me quite busy. Situated in Washington where one gets a kaleidoscopic view of the national picture, the great problems facing us in this reconversion period are almost overwhelming.

We of the medical profession are all fully aware of the inevitability that the coming year will bring to us many unusual problems. A large percentage of our most energetic group are still away from us or are just being returned from serving our country. The older members remain to carry on and meet the changing situations confronting the medical profession. The essential task will have its beginning among our outstanding professional men and women and must have its inception at the community level, for our country, as well as our profession, is only as strong as the sum total of its local communities.

There can be no genuine begrudging of the majority of those whose duty it was to stay home; there are only rare instances in which an occasional doctor deliberately stayed home when he knew his country was calling him to duty, and this individual must live with himself and soothe and justify his own conscience and actions.

We who were in service do expect and request that the various young men who accepted government grants to become medical doctors will be required to qualify themselves and fulfill their duty in the service for the corresponding number of years as those of us who have gone on before, in and through the months and years of maneuver, training and combat.

Now, if each one of you will really take pause and put yourself in the returning doctor's place you will see his various problems and the necessity for their solution.

I will speak of these various categories of veteran medical men from my experience in the field Army, and with thorough understanding of their problems as I know them from personal contacts with numerous ones in each group.

First, there are those men who have been in practice for many years and are either in the middle or late forties, but who have conscientiously striven to do their duty, volunteering their services for the good of their country, and being fully aware of their personal sacrifices.

Group two we will classify as the individuals who have just recently graduated from medical school and either have or have not finished the year of internship before being taken into the service.

Group three are those individuals who have been taken into the service after having finished all internships, residences, and who have become qualified by their specialty boards.

Now, before reconversion of these men from war to peace can be discussed, we must carefully determine and understand what type of duty they have been undertaking.

There is a group of individuals, both young and old (and in many instances, regardless of age or past experience), who have been placed in administrative positions and kept by desks for the full period of their service. Many of these men now feel unstable and unable to reenter practice without first undertaking at least a short course to reacquaint themselves with the new drugs, newer methods of therapy, and to regenerate and reburnish their former theories and practice of medicine and surgery. It will be difficult for some of these men to become assistants, although many are now doing so and some are undertaking sponsored classes.

Then there are those individuals, both young and old, who have been placed in positions of hardship, acting as aid men, such as in battalions, aboard ship, ambulance companies, collecting stations and clearing companies. The majority of these men are young and able-bodied and have been working under adverse conditions which have certainly been a far cry from keeping them in any position to be professionally alert to the advancing medical world. These men are going under the most terrific program of reconversion, mentally, physically, and professionally.

I should place this group in two classes: one being those who have ceased to talk very much about their plight and who think themselves very fortunate just to be alive and to be allowed to live in these good United States, under any circumstances. The others are the reactionaries who feel that they have been doing the dirty work, the hard work, and who have been

wracking their own physical and mental beings, not only because it was their plight, but because they were not fortunate enough to be given a chance of rotation because of lack of continuous incoming personnel to take their places. These men are the most bitter. They probably comprise a considerable number of our returning doctors.

The third group are those who have done extensive professional work in either front line hospitals or hospitals of rear echelons; from field units through evacuation, station and general hospitals, numbered and named. These men have done professional work with direction and under qualified and competent professional leaders.

There is a fourth great group, comprising all those medical officers who have done extensive professional work without recognized qualified direction.

Of the latter two groups, many wish to proceed with fellowships or residences again to acquaint themselves with the treatment of civilians of all ages and of all types of maladies, before getting back into practice. Many are now preparing for their board examinations and expect to fulfill their specialty requirements.

The average age of our war casualty ranges from 18 to 38, with the exception of officers, and generally speaking, during the war the medical officers have gained relatively little experience with conditions prevalent in the middle and old age groups such as degenerative or chronic diseases. There was also a scarcity of experience in the care of women and children; many gained no experience in obstetrics, gynecology and medical conditions of children and adolescents. The officers' experience is extremely limited, too, regarding the chief causes of death, namely: heart diseases, cancer, and cerebral hemorrhage. For the majority of officers there has been a prolonged absence from the laboratory and research projects, and from experience with some of the newer procedures in hospital practice.

Our real problems begin when we return to our cities and to our homes. Even though we do settle back in the same town, for many it is like setting up anew. For one thing, very little of our old practice can be salvaged; at least, much of this depends, of course, upon the fellowship and ethical sportsmanship of our colleagues. And then, too, we find that our offices have been taken over by broadcasting companies, chain stores, other doctors, hospitalization plan people, chiropractors and osteopaths, all of whom, along with many of the medical profession, give us their best wishes and hopes for the future, and let us know what a fine job we have been doing and how they would like to help and see us succeed, but very sorry they can do nothing for us in the way of helping us find suitable office space! The returning doctors need real help on this soon.

Our profession, as well as general business, must undergo reconversion. Some can make readjustments in space and office hours on a temporary basis to accommodate the veterans. Those of the profession who have been keeping the home fires burning have the "know-how" for admission to hospital staffs. Room reservations in hospitals should be arranged so that the returning service men in the profession can have their share of beds for patients.

Yes, there are many problems, but all of us working together will find a solution for them.

I want to interpolate a few words about the veterans, in general, who merely want the golden rule practiced in their behalf. The wounded men who are now veterans are going to demand good care, better care, and with a more personal individualized treatment, with modern rehabilitation training, and a chance to work and become purposeful citizens. With all the new discoveries, therapeutic advances, and our modern methods of rehabilitation, we must attack this problem with the utmost confidence; however, we must have the help and full cooperation of every member of the medical profession; this is a national problem.

America has out-produced the world for this war. Her men have rated among the highest, as warriors; her excellent medical care has saved countless thousands. We Southern physicians are confident and determined that America shall maintain the best medical care in the world for our own people; not by borrowing old-world ideas, but by plain workable common-sense American methods. We all know full well that the future of medicine is at stake—we must have

the strongest leadership; we must work together. Every doctor who actually aids in helping to readjust, locate and rehabilitate the war doctor or the veteran is rendering patriotic, scientific, educational and humanitarian service, and is helping his profession and his hospital to build a firm foundation in behalf of public welfare, in accordance with the true principles of democracy. We must accept this challenge!

FOOD AND HEALTH IN GREAT BRITAIN DURING THE WAR*

By J. C. DRUMMOND, D. Sc., F.R.S.†
London, England

By rationing and controlled distribution on the one hand and by price control and subsidies on the other, the government of the United Kingdom has been able during the years of the war to insure that all classes of the population obtained a fair share of the food supplies available. The rations have invariably been honoured and the extent of black market transactions has been negligible. Rich and poor alike have shared a diet, which if simple and dull, has been nutritionally adequate.

In 1940 the expenditure on rationed foods was 25 per cent and on unrationed 75 per cent; in 1944, no less than 56 per cent was spent on rations, "points" or foods covered by distribution schemes. These represent about 43 per cent of the calories ingested. We were obliged of necessity to reduce greatly our dependence on imported food and to increase agricultural production. This inevitably led to our becoming accustomed to living on a much plainer and a more monotonous diet than we had enjoyed before 1939. Our importation of food and feeding stuffs dropped from 22 million tons before the war to 11 million tons in 1944, and at the same time great economies of shipping space were achieved by selection and concentration of cargoes. From 1939 to 1944 the home production of wheat rose by 90 per cent; that of potatoes by 89 per cent and of vegetables by 53 per cent. In tonnage, we were producing in 1944 about 60 per cent of our needs as compared with about 33 per cent before the war.

The important changes in our consumption are shown in *Table 1*.

Throughout the war the food policy of the government has been guided by nutritional considerations and there has been the closest cooperation between those responsible for policy in respect to production, importation and distribution and the scientific and medical experts who have advised on the nutritional aspects of the many problems that arose.

Apart from the steps taken to distribute equitably the staple foods in short supply the government introduced a number of special measures to meet special nutritional needs. The importance of such measures is more fully appreciated if it is borne in mind that the food supply available to the people of the United Kingdom before the war was in all but two respects adequate to meet the nutritional requirement of the entire population, had it been made available to the people on the basis of physiological need and not been consumed on the basis of purchasing power. Yet, if one accepts the conclusions drawn from dietary surveys made shortly before the war, so great was the influence of the disparities of income on food consumption that nearly a third of the people were undernourished.

The special measures introduced by the gov-

SUPPLIES AVAILABLE (RETAIL STAGE OF DISTRIBUTION) FOR CIVILIAN USE

	Lbs. per head 1944	Per cent Pre-war consumption
Potatoes	285.1	161
Cereals	246.1	117
Yellow and green vegetables	113.7	147
Other vegetables	63.1	140
Milk	48.1	126
Meat	107.9	81
Fats	38.2	84
Citrous fruits and tomatoes	32.1	69
Other fruits	65.4	70
Eggs (shell and dried)	24.9	102
Poultry, game, fish	22.9	74

Table 1

*Read in General Session, Southern Medical Association, Thirty-Ninth Annual Meeting, Cincinnati, Ohio, November 12-15, 1945.

†Scientific Adviser, Ministry of Food of the United Kingdom, London, England.

ernment in Great Britain were designed to dispel the influence of these disparities and at the same time, to deal satisfactorily with the two over-all deficiencies, of thiamin and of calcium, revealed by the prewar investigations.

Before passing to a brief review of these special measures it may be useful to illustrate how the cost of the important foods was controlled during the war period. This was done by price control, backed by subsidies. In this manner the cost of food was held at a level about 25 per cent higher than in 1939 (*Fig. 1*). The rise of working-class expenditure on food during the past 2½ years is shown in *Fig. 2*.

The special measures have now to be considered.

Use of Long-Extraction Flour.—In 1940 the government introduced a wheaten flour of 85 per cent extraction. Its use became general in 1941 and was maintained until October 1944, when the level of extraction was reduced to 82½ per cent. In January 1945, a further reduction to 80 per cent was made. This reduction of 5 per cent was permitted after careful consideration of investigations carried out at the Ministry of Food Cereals Research Station, which showed that by a slight modification of the ordinary milling procedure a flour of paler color, and more acceptable, therefore, to the public generally, could be produced at 80 per cent extraction, without a substantial loss of the more important nutrients. The analytical data for the three flours are given in *Table 2*.

EXTRACTION LEVEL

	85 per cent	82½ per cent	80 per cent
Thiamin I.U./g	0.98	0.88	0.82
Riboflavin mu/g	1.3	1.0	0.85
Niacin mu/g	17	16	16
Iron mg/100g	2.07	1.94	1.65
Fibre per cent	0.5	0.3	0.2
Color index*	100	41	11

*Based on arbitrary scale of 100 for 85 per cent and 0 for white flour of 70 per cent extraction.

Table 2

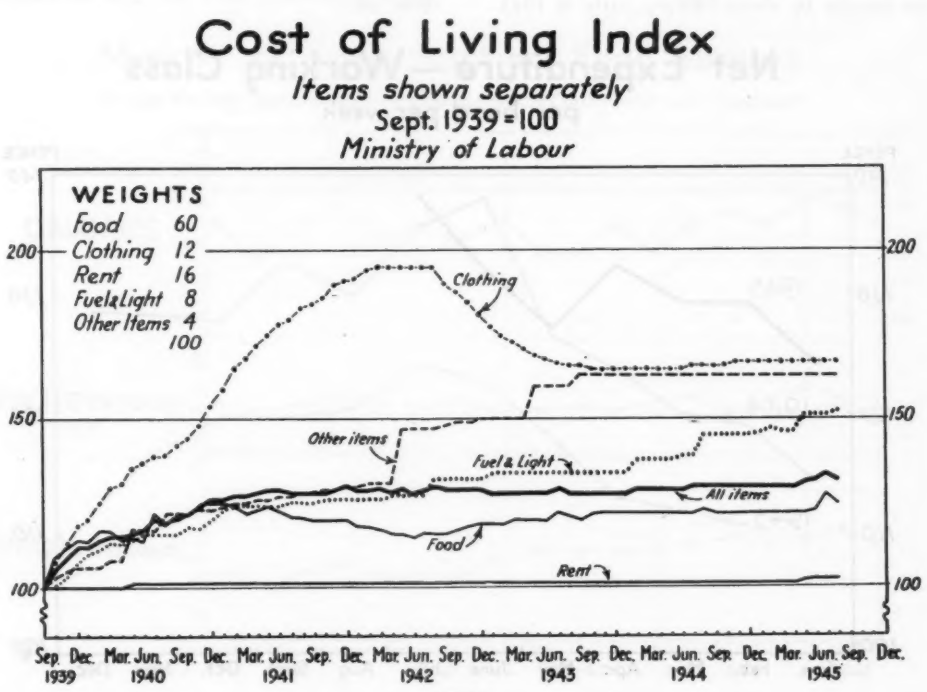

Fig. 1

The 80 per cent flour makes a good loaf and is proving generally popular. This one introduction has brought the thiamin intakes throughout the country up to satisfactory levels. Even those engaged in heavy industry, such as miners, have been found to be getting sufficient thiamin for their energy needs. It must be borne in mind that heavy workers, who get only the ordinary civilian rations of meat, fats and sugar, plus small supplements of meat and sugar in their canteen meals, derive a large proportion of their calories from bread and potatoes. Surveys have shown that it is common for miners to be obliged to eat as much as 23 oz. of bread and 12 oz. of potatoes daily in order to get their energy.

The over-all deficiency of calcium to which I have referred has been made good by the addition of 8 oz. of calcium carbonate to the 280 lb. sack of flour. This addition was made not only to raise the general levels of calcium intake but also to offset any immobilizing influence of phytic acid on calcium in the digestive tract. As will be seen from *Fig. 4* the addition caused the level of calcium intake to rise sharply by about 180 mg. early in 1943.

We now come to a number of measures specially designed to improve the nutritional condition of mothers and children.

National Milk Scheme.—This was brought into operation in 1940. It provides every pregnant woman and nursing mother and children from birth to five years of age with 1 pint milk at the reduced cost of 2d, or free of charge, if family circumstances indicate the need. This scheme has had a great success. About 96 per cent of those entitled to benefit by it take up their supplement. To this scheme is closely tied a Vitamin Scheme, by which the expectant mother, on certification of her pregnancy, is entitled to a regular issue of (a) concentrated orange juice to provide about 25 mg. vitamin C daily and (b) either cod liver oil or tablets to provide about 4000 I.U. vitamin A and 800 I.U. vitamin D daily. The tablets also contain 250 mg. of calcium phosphate.

When the child is born and until it reaches the age of 5 years, it is entitled to the same quantities of concentrated orange juice and cod liver oil.

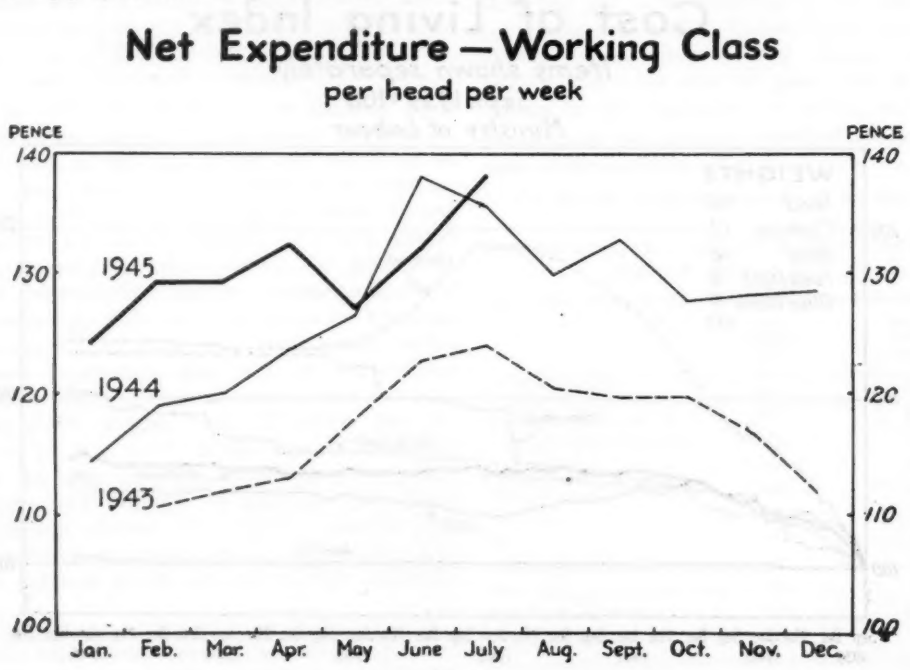

Fig. 2

The uptakes of these supplements are as yet less satisfactory than those of the milk. About 40 per cent of the potential supply of orange juice is taken up, but that of the cod liver oil is only about 23 per cent. There are several reasons for this relatively poor response. Cod liver oil is not popular; moreover, many mothers prefer to buy their own or their doctor's choice of vitamin preparations rather than to make use of the government scheme.

Expectant mothers are also entitled to an additional half ration of meat, 2 packets of dried eggs at each allocation, and one additional egg per allocation.

On birth of the child the mother can obtain 1 pint of milk as a priority supply, at ordinary cost, in addition to that available at a cheap rate or free under the National Milk Scheme.

The approximate value of these supplements for the expectant and nursing mother is shown in *Table 3*.

Milk and Meals in School.—In 1934 the Board of Education and the Milk Marketing Board introduced a scheme for providing cheap milk for school children. It had considerable success, but in 1941 and again in 1942 a big drive by the Government Departments concerned was undertaken to increase the uptake. In 1941, the whole cost of handling the scheme was taken over by the Board (now Ministry) of Education and in 1942, the scheme was extended to cover all grant-aided schools.

In 1941, about 60 per cent of the children in

	Optimal daily requirement, N.R.C.		Approximate contribution of special rations and supplements	
	Pregnancy	Nursing	Pregnancy	Nursing
"Animal" Protein, g.	40-50*	50-75*	25	45
Calcium, g.	1.5	2.0	0.8	1.4
Vitamin A, I-U	6000	8000	4600	6-8000
Vitamin C, mg.	100	150	30	20-30
Vitamin D, I-U	800	4-800	850	1250
Riboflavin, mg.	2.5	3.0	0.85	1.65

*Arbitrary figures used by Ministry of Food.

Table 3

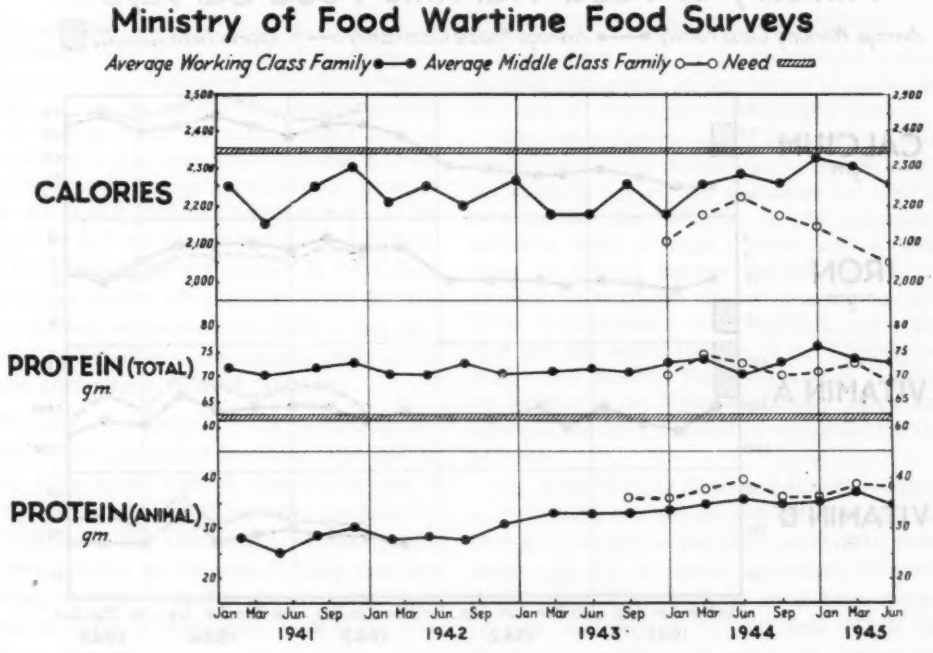

Fig. 3

schools in England and Wales were getting milk; now, the figure is about 75 per cent.

These milk priority schemes have taken a large proportion of the liquid milk available for consumption in the country. This year the priority groups drank nearly 50 per cent of the supply. So great has been their demand that in the winter months of low production it has been necessary to restrict severely milk supplies to the ordinary consumer. At the present time the ordinary person can get no more than 2 pints a week. There is, of course, no sale of milk in cafes, milk bars or restaurants.

The Ministry of Education has also made great efforts to expand the provision of meals for school children. As long ago as 1907, the original scheme was launched and by 1939 about 250,000 meals were provided, mainly for necessitous children. The meals were not always midday dinners; sometimes they consisted of sandwiches and other snacks. In July, 1940, there was a call for a big expansion and in 1941 the government stimulated local authorities by offering to bear a minimum of 70 per cent and a maximum of 95 per cent of the cost. The new scheme covered the provision of nourishing midday dinners. By October 1942, the million mark had been reached and by 1944, one-third of all the children in elementary schools in England and Wales were getting a substantial meal of this kind.

Surveys have revealed that the meals served to the elementary school children provide about one-third of the calorie requirements, about 40 per cent of the proteins and about one-quarter of the calcium and vitamin C the children need.

The rate of growth of the scheme has been restricted by shortage of kitchen facilities and trained cooks, but, with the end of the war, it is hoped that these difficulties will soon be less formidable. To this end, the Ministry of Education has produced blueprints of 20 standard types of buildings for kitchens, sculleries and dining rooms, appropriate for schools of various sizes and situations. These, and priority in the provision of equipment should greatly speed up

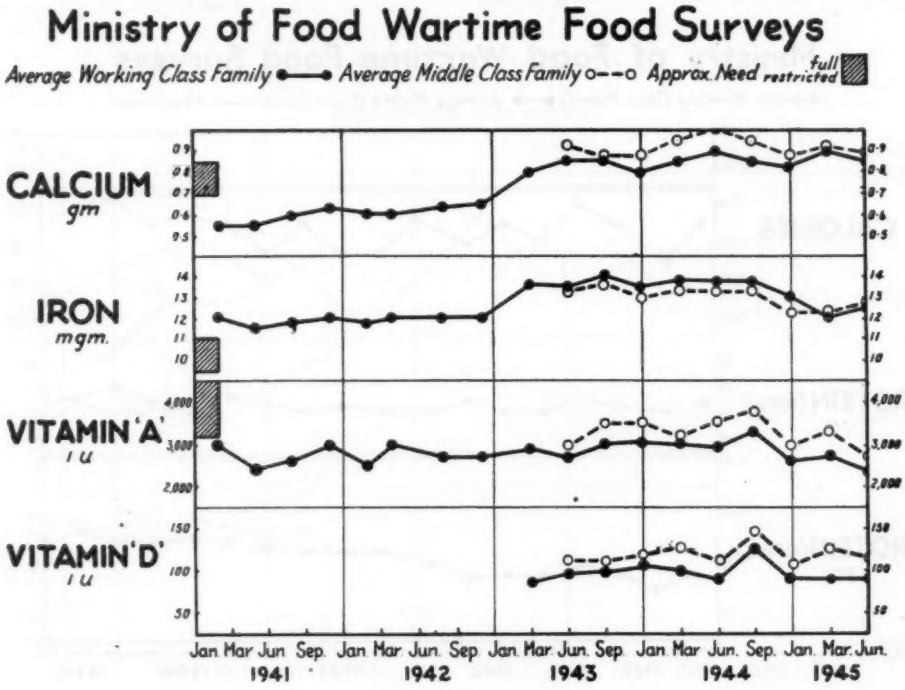

Fig. 4

the achievement of the current target of 3.75 million meals a day (75 per cent).

Under the new Education Act the Ministry of Education imposes on the local authorities the duty of providing milk and meals for pupils in their schools. For their part, the government now bears the whole cost of new buildings required by local authorities for the extension of the scheme.

Canteen Meals for Industrial Workers.—All factories employing more than 250 "hands" are under statutory obligation to provide a canteen for service of meals. Actually, in many factories that do not employ so many people canteen facilities are provided.

There were about 1500 works canteens in 1939; there are now 19,000. About 11 million meals a day are served to workers in factories in the United Kingdom at the present time. By and large, the nutritional value of the meals is excellent.

Vitamin in Margarine.—Since 1940 all margarine made in the United Kingdom has been enriched to contain about 500 1-U vitamin A and 60 1-U vitamin D per oz.

Expansion of Allotments.—A great expansion of allotments and of the raising of vegetables in gardens has been encouraged by the Departments of Agriculture. By appropriate planting according to region, based on advice issued by the departments it has been found possible to raise crops on an ordinary 10-rod allotment, the usual area, which will provide enough vitamin C for 4-5 people and enough vitamin A for 2 individuals for every month of the year. In 1944 there were over a million allotments in Great Britain. Their produce represented, therefore, a very substantial contribution to the vitamin needs of the people, particularly those of the towns.

The State of Nutrition.—The nutritional condition of the population has been, and still is, being kept under careful observation and a system has been organized whereby the Ministry of Health, as the Department responsible for nutritional policy on the scientific side considers relevant problems at an Interdepartmental Committee on which is represented each of the government departments concerned. This Committee considers nutritional problems that call for joint discussion.

The following measures are in operation with a view to gathering information about the nutritional condition of the population:

(a) *Food Surveys.*—These were begun by the Ministry of Food in 1941 and have been maintained ever since. They consist of monthly dietary surveys carried out in households in 18 representative areas in the country. Special attention is given to working class families, but parallel surveys are frequently made of middle-class households, in order to obtain comparable data. For example, in July, 1945, the survey covered the food consumption by 683 working class families comprising 2335 individuals and 111 middle-class households with 343 persons. When specially required, surveys are made of groups such as miners and old age pensioners. The data are analyzed by rapid procedure so that the results are available within 4 to 5 weeks. The analyses provide detailed information on:

Average expenditures on food per head.
Expenditure on indivjdual foods.
Quantities of individual foods bought.
Average nutrient evaluation of the food bought.

From these data it is possible to obtain valuable indications of the trends of consumption and of changes in the nutritional picture.

(b) *Clinical Surveys.*—The Ministry of Health carries out surveys designed to assess the nutritional conditions of the population by clinical examination. The Ministry is also concerned indirectly with a large number and a wide range of clinical surveys carried out by individual investigators or by research groups. These investigations are correlated, with the approval and active support of the Ministry of Health and Medical Research Council, through the agency of the Nutrition Society which has a special Advisory Committee appointed for the purpose.

(c) *Body Weight Surveys (Adults).*—Begun early in 1943 this survey aims at recording the changes in weight of the adult population; these being regarded as useful indications of nutritional state. The weighings cover large groups of men and women (27,000 and 32,000 respectively) and special groups of miners and

industrial workers are also studied. The weighings are made quarterly.

(d) *Weight of Children.*—The Ministry of Health has cooperated with the Ministry of Education in collecting data concerning the rate of growth of children.

Results of Surveys.—The results of these surveys suggest that nutrition has been well maintained during the war. In the first place, the results of food surveys show that the nutrient content of the diet of the average working class family is, generally speaking, satisfactory. The margin between the consumption by working class and middle class families is very narrow; evidence that the rationing, distribution and price control mechanisms are achieving the aim of equitable partition. The general picture is presented in the charts shown in *Figs. 3, 4* and *5*. To illustrate the details, the nutrient evaluations of the foods consumed in August, 1945, by individuals in working class families and in middle class families respectively are set out in *Table 4*. It also gives comparable data for 1944 and for 1943 (working class only). The figures show that by comparison with the estimated "full" and "restricted" allowances (N.R.C.) the nutritional picture is reassuring. It is interesting to observe from *Fig. 5* how important is the contribution potatoes make to the vitamin C content of this diet in the United Kingdom. The sharp peak in the curve represents the crop of early potatoes of relatively high C value.

The trend of the vital statistics is also reassuring. 1944 has shown an increase in birth rate, accompanied by a further decline in infant mortality. In 1939, the infant mortality stood at 50 per 1000 related live births. It rose during the early part of the war. By 1943, however, it had fallen to 49 and in 1944 it fell still further to a figure between 45 and 46. Again, in the case of maternal mortality the rate per 1000 total births in 1939 stood at 3.10. In 1942 it had fallen to 2.47 and there has been a subsequent fall to 2.3. The still-birth rate also fell in 1944 to 27.7 per 1000 total births compared with 30.1 in 1943 and 37.2 in 1940.

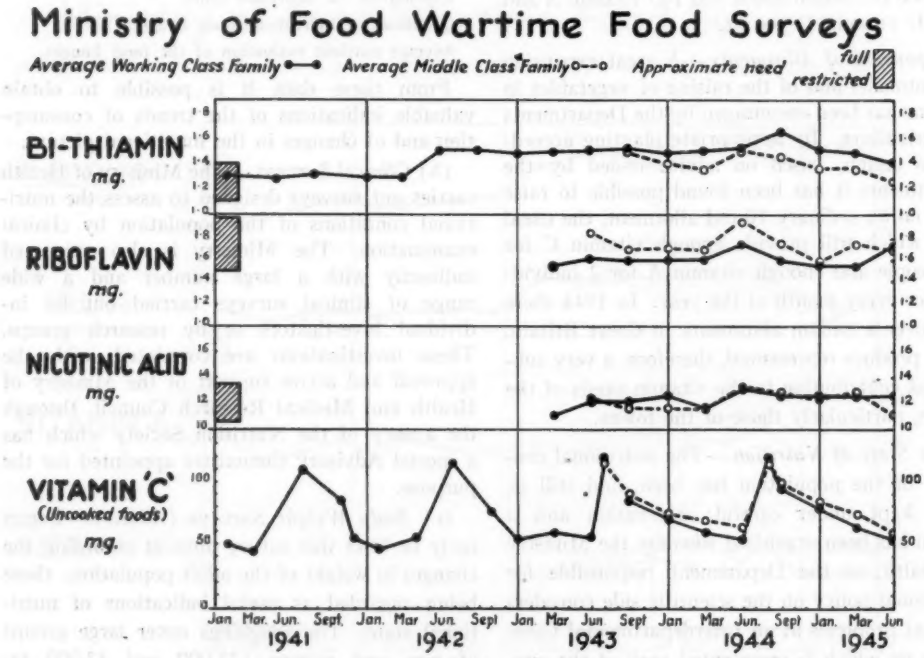

Fig. 5

There is good reason to give at least part of the credit for the saving of the lives of so many infants and mothers to the policy of making available special allowances of milk and other foods beneficial to their health.

The records of adult body weights are satisfactory and studies of school children show a rate of growth not less, and in some cases greater, than that seen in pre-war days. Once again, it is reasonable to assume that this result is in no small measure due to better diet.

A comprehensive investigation by the Medical Research Council of the hemoglobin level of the blood of the population has revealed no serious incidence of anemia. This, again, may be ragarded as evidence that nutrition in the United Kingdom has not been impaired by the wartime experience.

There is clinical evidence that the condition of the teeth of school children has improved during the war.

It must be borne in mind that it is as yet early to expect to detect marked benefits to health produced as a result of the measures outlined above but if they are kept in operation, as appears probable, very striking effects may be recorded in the course of the next ten or twenty years.

Post-War Nutrition Policy.—The Government of the United Kingdom has given much thought to the question of continuing in the years after the war a nutritional policy comparable with that which is believed to have proved so beneficial during the hard days of the fight against the Axis forces. There are already clear indications that a positive policy will be continued.

In September, 1944, there was published a White Paper on Social Insurance (C.M.D. 6550) in which the government of the day set out its proposals for achieving social security. They were revolutionary proposals. An essential part of this new social security scheme is a system of family allowances. The report stresses the im-

MINISTRY OF FOOD WARTIME FOOD SURVEY—AUGUST, 1945

Nutrient content of food purchased (a) per head per day.

	Calories	Protein Total gms.	Protein Animal gms.	Fat gms.	Carbohydrate gm.	Calcium mg.	Iron mg.	Vitamin A I. U.	Thiamin mg.	Riboflavin mg.	Niacin mg.	Ascorbic Acid mg.	Vitamin D I. U.
Working Class Households													
August, 1945	2,230	73.6	34.5	82.0	300	830	13.0	2,607	1.43	1.53	12.71	118	135
July, 1945	2,267	74.7	34.6	83.7	304	875	12.8	2,718	1.47	1.60	12.76	112	127
August, 1944	2,273	68.1	32.8	88.4	303	801	12.8	2,647	1.62	1.67	13.26	114	116
August, 1943	2,212	70.5	32.0	85.2	292	810	13.2	2,671	1.54	1.64	12.82	116	123
Requirements (b)													
Full	2,350	61.1	(c)	(d)	(d)	873	11.2	4,337	1.41	1.98	13.44	66	(c)
Restricted	2,350	61.1	(c)	(d)	(d)	723	8.9	3,440	1.12	1.53	10.50	53	(c)
Middle Class Households													
August, 1945	2,127	72.6	37.0	80.1	280	896	12.4	2,858	1.36	1.64	12.54	107	151
July, 1945	2,048	69.1	36.3	81.8	260	907	11.6	3,097	1.28	1.62	11.34	90	132
August, 1944	2,258	68.9	36.2	90.2	296	871	12.7	3,316	1.55	1.76	13.46	103	133
Requirements (b)													
Full	2,356	61.2	(c)	(d)	(d)	838	11.3	4,538	1.41	2.00	13.63	67	(c)
Restricted	2,356	61.2	(c)	(d)	(d)	663	8.7	3,443	1.08	1.49	10.32	52	(c)

(a) Gross purchases include foodstuffs from gardens, etc.
(b) Based on all samples surveyed during 1944.
(c) Not available.
(d) Fat should provide 27-30 per cent of the total calories of the diet, and carbohydrate not more than 60 per cent.
Note: No allowances are made in the above table for losses of vitamins in cooking, which in the case of ascorbic acid result in an actual intake substantially lower than the figures shown.

Table 4

portance of providing a substantial part of the allowances by benefits in kind. It goes on to say,

"The school meals and milk services will therefore be so extended as to make them available to pupils in primary and secondary schools in receipt of grants from the Ministry of Education or the Scottish Education Department."

This means that when the new scheme of family allowances is introduced these particular "benefits in kind" will be free of cost to the parents and will be available for all children in a family attending school, including the first.

The project for providing free milk and free midday meals for these children will, when fully developed, cost something of the order of £60,000,000 annually.

As regards the other special measures, National Milk Scheme, Vitamins Scheme, and so on, that have proved themselves to be so valuable during the war years, it is sufficient to point out that on the occasion of the opening of Parliament in the autumn of 1945 the government indicated in the King's speech that everything will be done to provide and distribute food to the people at prices which they can afford to pay and that the new wartime food services for the workers, mothers and children will be maintained and extended.

It is thought, therefore, that in the United Kingdom work has been done and plans for future work are being made that support and fulfill many of the important recommendations adopted two years ago at the Hot Springs Conference.

TYPES OF CIRCULATORY FAILURE*

By TINSLEY R. HARRISON, M.D.
Dallas, Texas

Ten years ago this same subject was discussed before this same Association by this same speaker. To avoid repetition entirely will not be possible, but perhaps this fault can be minimized if in today's consideration the general principles, which formed the subject of the previous presentation, be briefly summarized and the main emphasis be placed upon some of the rarer and less commonly recognized causes of circulatory failure.

From the anatomic standpoint either the heart or the peripheral circulation may be primarily to blame for circulatory failure. From the viewpoint of clinical physiology two general syndromes may be observed, namely: forward failure, associated with inadequate blood supply to the tissues and characterized clinically by feebleness of the pulse, lowering of the blood pressure, coldness of the skin, weakness, unconsciousness, and, in severe cases, sudden death; and backward failure, associated with engorgement of blood in the capillaries and characterized by dyspnea, cough, rales at the lung bases (the manifestations of pulmonary congestion due to failure of the left side of the heart), plus venous distention, edema, and enlargement of the liver (the manifestation of systemic congestion due to failure of the right side of the heart). Backward failure is always cardiac in origin; forward failure may be peripheral or cardiac. When the heart fails acutely the manifestations of forward failure may be pronounced, and this may lead the unwary observer to assume that the peripheral circulation is primarily at fault. However, a more careful examination will usually suffice to make the distinction, for in the cardiac type of forward failure some of the signs of backward failure, so conspicuously absent when the primary trouble is in the periphery, will usually be found, the patient tending to sit upright, breathing with some difficulty, having rales at the bases, the veins being prominent and the liver somewhat tender.

The distinction between the two different types of circulatory failure is by no means a purely academic question: on the contrary it is a matter of pressing practical concern. Thus, the very procedures such as transfusion of blood or plasma and the administration of saline, which may be life-saving in patients with peripheral circulatory failure, may be dangerous when applied in subjects with cardiac failure; and, contrariwise, the use of digitalis, diuretics and sodium restriction, while of the greatest

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*Read in General Session, Southern Medical Association, Thirty-Ninth Annual Meeting, Cincinnati, Ohio, November 12-15, 1945.

*From the Department of Medicine, Southwestern Medical College, Dallas, Texas.

value when the heart is at fault, are likely to be harmful when employed in patients with disorders of the peripheral circulatory apparatus.

We may now leave these general and, perhaps, trite considerations and turn our attention to some of the less common causes of circulatory failure which may lead to difficulty in diagnosis and, hence, to errors in therapy. The classical clinical pictures of chronic congestive heart failure and of acute peripheral circulatory failure due to hemorrhage or trauma may be neglected as they are familiar to us all.

Marked disturbance of the rate of the heart, whether in terms of bradycardia or tachycardia, are well recognized as causes of acute forward failure, typical examples being syncopal attacks due to heart block, and acute collapse due to paroxysmal tachycardia. Less frequently, disturbances of rhythm without significant change in rate may produce similar circulatory effects. Thus, the recurrent onset of bigeminal rhythm, in which every alternate beat is premature may be accompanied by attacks of faintness, giddiness, and even of syncope, as the result of the sudden decline in cerebral blood flow. When the patient is seen during the seizure the attacks due to this cause are readily recognized because of the characteristic disturbance of rhythm. Otherwise, the diagnosis may be difficult or impossible. Such attacks may be prevented by the use of quinidine, potassium salts, atropine, or the withdrawal of digitalis when this drug is responsible for the arrhythmia.

There are certain rather rare disorders of the heart which are characterized by sudden mechanical hindrance to circulation. In some such disorders the manifestations of acute forward failure, including faintness, collapse, and syncope, may predominate, while in others the picture is that of backward failure (*Table 1*). Patients with mitral stenosis may develop free "ball-valve" thrombi in the left auricle and such thrombi may from time to time occlude the mitral orifice. This condition should be suspected when a patient with mitral stenosis either expires suddenly and unexpectedly or develops recurrent syncopal attacks accompanied by pulmonary edema and, more particularly, if peripheral embolism occurs as the result of detachment of portions of the thrombus.

A similar clinical picture may occur due to an entirely different disorder, a pedunculated myxoma of the left auricle. Such a tumor may, likewise, produce intermittent occlusion of the mitral orifice, resulting in syncopal attacks, and may even lead to a presystolic murmur. The differential diagnosis from mitral stenosis with ball-valve thrombus may be made in some instances by the radiographic demonstration of bizarre deformity of the auricle by the tumor.

Patients with syphilitic aortitis or bacterial endocarditis of the aortic valve may develop rupture of an aortic cusp. In addition to the sudden appearance of the typical musical ("cooing dove," "violin string") diastolic murmur which is commonly noticed by the patient as a feeling of vibration in the chest there may be rapidly developing left-sided heart failure or, less commonly, attacks of syncope or of angina.

There are two unusual complications of myocardial infarction, each of which may be accompanied by the sudden onset of congestive heart failure and a loud systolic murmur. One of these is rupture of a papillary muscle, in which case the sudden rise in pressure in the

SOME UNUSUAL CAUSES OF ACUTE CARDIAC FAILURE

Condition	Chief Clinical Features	Remarks	
Bigeminal rhythm	Every alternate beat premature. Commonly due to digitalis, attacks of faintness	Failure predominantly of forward type with attacks of faintness or syncope	
Ball valve thrombus in left auricle	Mitral stenosis; syncopal attacks; systemic embolism; sudden death		
Pedunculated tumor of left auricle	Like those of ball valve thrombus. False signs of mitral stenosis may be present		
Ruptured aortic cusp	Sudden appearance of cooing dove diastolic murmur in patient with syphilis or bacterial endocarditis	Left sided failure	Failure predominantly of backward type
Ruptured papillary muscle	Sudden appearance of loud systolic murmur in patient with recent myocardial infarction		
Ruptured interventricular septum	Sudden appearance of loud systolic murmur in patient with recent myocardial infarction	Right sided failure	

Table 1

left auricle as the result of the mitral regurgitation leads to the signs of left-sided failure; the other is rupture of the interventricular septum, in which case the rise in pressure in the right ventricle leads to the manifestation of right-sided failure.

When we turn from the heart to the periphery the disorders which may cause acute circulatory failure are numerous. Ordinarily, the picture of shock is due to some condition which leads to acute decline in the volume of the circulating blood (the hematogenic type of peripheral circulatory failure) as the result of the predominant loss of whole blood (hemorrhage), plasma (traumatic shock, burns), or water (dehydration from vomiting, diarrhea, or excessive sweating).

On the other hand the clinical pictures of collapse and syncope (the neurogenic and vasogenic types of peripheral circulatory failure) are usually brought about either by actual vasodilatation, by failure of physiologic vasoconstrictor mechanisms, or by various conditions which lead to pooling of blood in the venous system. Among the conditions which induce such mechanisms simple (emotional) fainting and carotid sinus syncope are the most generally recognized. Sudden increase in vagal tone, leading to bradycardia and to vasodilatation is responsible for such seizures, as well as for certain rarer causes of syncopal attacks, including such conditions as hypersensitivity of the oculocardiac reflex, characterized by weakness or fainting occurring during operative procedures on the eyes, and various vago-vagal attacks such as syncope brought on by bowel movements.

Regardless of cause most syncopal attacks are intimately related to the position of the body, a stimulus which would produce outright unconsciousness in the standing position, causing only minimal and transient weakness in the recumbent posture. There are, however, a number of conditions in which the relationship of the attacks to posture is especially striking and these will now be considered in somewhat more detail (*Table 2*).

Postural, or orthostatic, hypertension occurs in two different groups of patients, both of which display a well marked decline in blood pressure attended by weakness or fainting in the standing as compared with the recumbent position. In one group of patients there is evidence of disease of the spinal cord in the form of tumor, tabes, diabetic myelopathy, et cetera, and apparently the vasomotor pathways are implicated in such a way that the normal vasoconstrictor reflex which is brought into play in the vertical position is weakened or absent. A similar condition is observed in patients who have been subjected to extensive resection of the sympathetic nerves for the treatment of hypertension.

Another and more common, but less severe, type of postural hypotension is that which is apparently due to pooling of blood in the legs and which is commonly seen in elderly subjects, usually men, who have developed "flabbiness" of the muscles, skin and subcutaneous tissues as the result of loss of weight and lack of exercise. Such individuals display a well marked decline in blood pressure on assuming the standing position and with it a feeling of light headedness, faintness and unsteadiness. True syncope

SOME UNUSUAL CAUSES OF ACUTE PERIPHERAL CIRCULATORY FAILURE

Condition		Chief Clinical Findings	Remarks
Orthostatic	With neurological lesions	Progressive decline in blood pressure in upright position. Evidence of diabetes, tabes, or other spinal cord lesions. Subjects often young	Acute peripheral circulatory failure due to inadequate venous return. Attacks of faintness or syncope in standing position. Benefit from vasoconstrictor drugs, from pressure bandages on legs or abdomen, or from sleeping with head of bed elevated
Hypertension	Without organic neurological lesions	Sudden decline in blood pressure on changing to upright posture, with tendency toward subsequent rise. Flabby muscles (convalescence, lack of exercise). Subjects usually elderly	
Venous pooling in lower part of body	Postexertional syncope	Attacks of faintness or syncope occurring immediately after exertion	
	Varicose	Attacks of faintness	

Table 2

is rare but falls are common and may result in fractures. Such cases are often mistakenly considered to be suffering from organic cardiac disease, or from cerebral arteriosclerosis, an error which can be readily avoided by measurement of the blood pressure in the recumbent posture and immediately after standing. In this type of postural hypotension, unlike that which accompanies organic disease of the spinal cord, there is a tendency for the blood pressure to assume normal values after the subject has been upright for a short time and, hence, the measurements should be made immediately after the change of position.

The type of postural hypertension which occurs during convalescence from severe fevers and following prolonged and complete bed rest from any cause is too well known to require further exposition.

Still another type of acute peripheral circulatory failure is that which may occur in persons with varicose veins as the result of pooling of blood in the dilated venous channels when the subject is in the upright position. Such subjects likewise may display a well marked reduction of blood pressure in the standing position but the characteristic diagnostic feature is the demonstration of dilated veins in the legs accompanied by symptoms of faintness in the upright posture, and usually alleviated by bandaging the legs.

As a final type of acute peripheral circulatory failure we may mention a condition which does not seem to have been clearly described in the literature, namely, post-exertional syncope. (This condition should not be confused with the exertional syncope which is sometimes observed during effort in patients with aortic stenosis or, more rarely, in subjects with neurocirculatory asthenia). The patient usually has "flabby" muscles as the result of lack of exercise and is commonly elderly. During exertion such as walking no symptoms appear, but when the subject ceases to walk weakness, faintness and syncope may occur, the symptoms occurring so suddenly that the subject does not have time to lie down before losing consciousness and falling. The mechanism of attacks such as this has not been carefully studied. Possibly the sudden cessation of muscular contraction leads to pooling of blood in the legs and inadequate venous return.

The differential diagnosis of the various forms of acute circulatory failure is by no means a matter of purely academic interest for the treatment depends on a clear recognition of the underlying mechanism. Thus, those seizures which are due to bigeminal rhythm may be alleviated by the usual treatment for premature beats, quinidine, potassium salts, withdrawal of digitalis, and so on. Attacks of postural hypotension may be benefited by having the patient sleep with the head of the bed somewhat elevated, by vasomotor drugs, and by the use of a snug abdominal binder. Seizure due to pooling of blood in varicose veins or appearing immediately after exertion may be helped by the use of elastic stockings or elastic bandages in order to prevent the collection of excessive quantities of blood in the legs.

Having considered a few of the rarer types of acute circulatory failure we may now return to the more important question of circulatory failure in general. It is of interest to note that although a clear separation of cardiac from peripheral and of backward from forward failure has been achieved only within recent years, the fact that there were two entirely different types of circulatory failure was clearly recognized by the great founder of physiology, William Harvey. In his book *De Motu Cordis*, in which he described the circulation of the blood, he mentions experiments on snakes in which he compared the effects of blocking the aorta and the vena cava. In the case of the aorta he noted that the heart became dilated, while obstruction of the vaca caused the heart to become pale and small. His conclusion, which has been well substantiated by the work of the past two decades, was:

"This is evidence of two kinds of death, failure from a lack, and suffocation from excess."

Again we are moved to admire the wisdom and insight of the father of modern medicine.

THE EFFECT OF FOLIC ACID ON SPRUE*

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A significant hemopoietic response following either the parenteral or the oral administration of synthetic folic acid to persons with macrocytic anemia was reported recently by Spies, Vilter, Koch, and Caldwell.[1] In each of the nine patients treated with folic acid there was a sharp increase in the number of reticulocytes in the peripheral blood, and the red blood cell counts and the hemoglobin content of the blood rose strikingly toward normal levels. This hemopoietic response was preceded slightly by and also accompanied by a definite upsurge of well-being, a subjective sensation similar to that which follows satisfactory liver extract therapy. Vilter, Spies, and Koch confirmed and extended these findings.[2]

Since macrocytic anemia occurs in sprue, one of the authors (T.D.S.) was interested in finding out whether or not folic acid is effective in the treatment of this disease. In the temperate zones, however, only sporadic cases of sprue occur, whereas in many tropical countries the disease is endemic. In order to settle the question of the effectiveness of folic acid in the treatment of sprue, it was deemed advisable to go to an area in which the disease is endemic. Accordingly, we communicated with Mrs. Myrtle Neblett, executive secretary of the Institute of Nutrition of Cuba and head of the Coordination Committee for Cuba (the Cuban branch of the Inter-American Affairs Committee). Mrs. Neblett consulted Dr. Garcia Lopez, president, and Dr. Fernando Milanes, vice president of the Institute of Nutrition of Cuba. On their recommendation the Institute of Nutrition sponsored our project for the study of the effect of folic acid on sprue. The trustees of the University of Havana and Dr. Angel Vieta, Dean of the Faculty of Medicine of Havana University, were asked if they wished to participate in a cooperative study. As a result, the University of Havana extended to us an invitation to study sprue in Cuba. A special ward at the Calixto Garcia Hospital, staffed with ward physicians, nurses, and orderlies, was assigned to us. Physicians in various parts of Cuba were requested to send to us cases which they considered to be sprue.

During our observations on this highly complicated and extremely variable clinical syndrome, we have noted a dramatic hemopoietic response to folic acid. Despite the fact that our general plan of study is being continued and extended and will be reported later in detail, our early findings are deemed to be so important that we are reporting them separately in this communication.

From the beginning of the study we have applied the following criteria in the selection of cases: (1) The patient must have a macrocytic anemia with red blood cell counts of 2.5 million or less and with a color index of over 1. (2) He must be untreated, or he must not have been treated recently enough to interfere in any way with our evaluation of the effect of folic acid. (3) He must not have any complicating disease which might be lethal during the course of the study. (4) The bone marrow must contain megaloblasts and have the typical erythroblastic arrest seen in macrocytic anemia. (5) He must have "fatty stools" and weight loss.

With these criteria in mind, we made a preliminary study of ten cases in which a diagnosis of sprue had been made, and we excluded the following seven: four patients who had macro-

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*In the medical care of the patients in the special ward we were assisted by many physicians who voluntarily aided us throughout the course of the study. In the special care of the patients in this study we were assisted by Mr. Jorge Pena, externe, and by Miss Mariana de la Fuenta and Miss Maria del Carmen Gonzalez, nurses.

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*The folic acid for the study was supplied by Lederle Laboratories, Inc.

cytic anemia with red blood cell counts of over three million (all had received liver therapy recently); one patient who had amebic dysentery and an hepatic abscess; one patient who had hypertensive heart disease and generalized anasarca; and one patient who had severe hemorrhage with premature delivery shortly before we saw her. She also had daily bleeding from hemorrhoids. This massive and chronic blood loss complicated her clinical picture.[8] These patients were transferred to the regular medical wards of the hospital for treatment.

Each of the three patients selected for study was accepted on our special ward for observation and treatment, and the following plan of study was carried out. A detailed medical and dietary history was obtained and a careful physical examination made. Laboratory examinations included gastric analyses, gastro-intestinal series, and examinations of the stools for fat and parasites. These examinations will be reported in a later communication. Daily examinations of the blood were made, including erythrocyte counts, hemoglobin determinations, and reticulocyte counts. Certified Bureau of Standards pipettes were used for both the white and red blood cell counts. The hemoglobin content of the blood was determined in grams by means of a Leitz photoelectric colorimeter, and the reticulocytes were counted in wet preparations by the use of a modified brilliant cresyl blue solution of Dameshek. The bone marrow studies which were made on each patient will be reported at a later date.

The patients were restricted to a diet similar to that eaten by our ward patients with macrocytic anemia in Alabama and Ohio. Meat, meat products, fish, and poultry were excluded. The following foods were allowed in any amounts desired: fruits and vegetables (either raw or cooked), salads made from fruits or vegetables, viandas (root vegetables found in Cuba), cereals, breads, butter or lard, sugar, and coffee.

After satisfactory base-line clinical and laboratory determinations were made, each patient was given daily 200 mg. of folic acid by mouth. It was given in divided doses of 100 mg. each, one dose at 10 a.m. and the other at 3 p.m. The folic acid was mixed to a smooth paste with 5 or 6 drops of cold water; then 20 c. c. of cold water were added while the mixture was stirred constantly. After the patient drank this material, the glass was rinsed with a small amount of water which he also drank to insure his getting as much of the folic acid as possible.

On admission each patient complained of loss of strength and vigor and lack of appetite, symptoms which had begun several months prior to admission, which had become steadily worse, and which were accompanied by loss of weight. Diet histories obtained by Mrs. Myrtle Neblett and by Miss Jean Grant revealed that these patients had subsisted on diets composed chiefly of rice, bread, potatoes, viandas, and bean soup. They seldom ate eggs, meat, poultry, or fish, and they rarely drank milk. For several months their appetites had been poor and their total food intake extremely small. During the preliminary period of observation we noted that they seldom chose to eat more than a bowl of soup and often refused everything but coffee.

From the physical examinations it was obvious that these patients were pale, weak, and undernourished. They lay quietly in bed, apparently too weak to move. They seemed disinterested in their surroundings. Each patient had a severe diarrhea characterized by copious, frequent, fatty, watery stools ranging from yellow to white in color.

On the third or fourth day after treatment was initiated, each patient voluntarily told us that he was gaining strength and that for the first time in several months he desired food.

It can be seen in the table below that the reticulocytes increased on the fourth or fifth day and came to a peak on the sixth or seventh day. Associated with this rise in reticulocytes was a subsequent rise in the red blood cell counts and in the hemoglobin content of the blood. Each patient of his own accord said that he had not felt so well in many years. The patients became generally interested in their surroundings. They began to walk around the ward and to visit with other patients. The stools of these three patients tended to become more normal in form, and occasionally they appeared almost normal for one or two days. It must be stressed, however, that under the conditions of this study, namely, that the persons were restricted to a diet very high in carbohydrates and devoid of meat products, their stools did not become and re-

main entirely normal. At times, despite the fact that the blood was regenerating, these stools often tend to become watery and foul as they had been before treatment. Our experience with giving liver extract to persons with sprue has been that it does not completely cause the stools to be normal. Before any final interpretation of the effect of folic acid on the character of the feces should be made, we must study many more cases over longer periods of time.

ORAL ADMINISTRATION OF FOLIC ACID IN SPRUE

	Millions Red Cells		Hemoglobin in Gms.		Reticulocytosis		
Case	Initial	10th Day	Initial	10th Day	First Day of Rise	Day of Peak	Per Cent at Peak
1	2.11	2.95	9.0	11.1	5	7	17.2
2	2.16	2.66	9.5	10.3	5	7	17.2
3	1.15	2.27	6.6	8.0	4	6	22.7

These studies show that persons with macrocytic anemia of sprue in relapse are greatly benefited by the oral administration of synthetic folic acid. There is a spectacular increase in the reticulocytes on the fourth or fifth day after treatment is initiated. This is followed by a rise in the red blood cell counts and in the hemoglobin content of the blood. Associated with this hemopoietic response is a striking gain in strength, vigor, and appetite.

Despite the fact that pernicious anemia is included in the group of macrocytic anemias, it is obvious that its natural pathogenesis is somewhat different from the macrocytic anemia of sprue, pregnancy, pellagra and from nutritional macrocytic anemia. One of us (T.D.S.) has a working hypothesis that folic acid in food occurs as a conjugate and that, in view of Castle's work, it is likely that in pernicious anemia the enzymes are unable to liberate efficiently the folic acid, whereas in sprue, pellagra, pregnancy and nutritional macrocytic anemia the folic acid, or substances that act similarly, are made more available. Also, some explanation must be made concerning the fact that a fairly large amount of folic acid is required to produce a maximum hemopoietic response in contrast to highly potent liver extract in which the active substance is apparently smaller. (T.D.S. has observed three patients who did not respond significantly on 5 mg. of folic acid but who did respond fairly satisfactorily on 10 mg. per day by mouth.) From a practical point of view, Spies and his associates have shown that synthetic folic acid has a striking anti-anemic effect in five types of macrocytic anemia. These are addisonian pernicious anemia, nutritional macrocytic anemia, and the macrocytic anemia of sprue, pellagra and of pregnancy.

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DISTURBANCES IN LIPID METABOLISM IN CHILDREN*

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Practicing physicians may be able to derive some consolation in their realization of the inadequacies in clinical medicine of knowledge pertaining to the field of disturbances in fat metabolism by noting that workers in the fundamental sciences state that much is yet to be learned about lipids even regarding their normal metabolism and function. It is the purpose of this presentation briefly to discuss a few of the problems in lipid metabolism which have been studied in the clinic and laboratories at the University of Minnesota, rather than to present even a cursory review of the subject as this in itself would entail a lengthy discussion.

The common physical property of solubility in certain organic solvents has been used to group all the fat and fatlike substances together in one class, namely, the lipids. These are further classified as simple, compound, or derived.[1] The most abundant of the simple lipids are the triglycerides which are esters of fatty acids with glycerol, while the esters of fatty acids with

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alcohol other than glycerol are known as waxes, the best known, medically speaking, being the cholesterol esters. Compound lipids in addition to fatty acids and alcohols contain a nitrogen base, phosphoric acid, sugar, sulfuric acid, or an amino group. The most common of these are the phospholipids, lecithin, cephalin, and sphingomyelin. These contain fatty acids, phosphoric acid, and a nitrogen base. The glycolipids, exemplified by cerebrosides, contain a carbohydrate, fatty acids, and a nitrogen base but no phosphoric acid. The sulfo and aminolipids are not clearly defined other than the fact that they contain either a sulfa or amino group. Derived lipids are those which are obtained by hydrolysis from the other two classes and consist of: the alcohols, glycerol or cholesterol; the nitrogen bases, choline, aminoethyl alcohol, or sphingosine; and fatty acids which may contain from 4 to 24 carbon atoms in the chain. Most of the fatty acids in food and in the body are saturated fatty acids with 16 or 18 carbon atoms. Oleic acid, an unsaturated fatty acid with 18 carbon atoms and one double bond, is the most abundant of the unsaturated fatty acids. Fatty acids containing 2 or more double bonds are not synthesized by the body and certain ones, linoleic acid (C_{18} with 2 double bonds) and arachidonic acid (C_{20} with 4 double bonds) are known in nutrition as the essential fatty acids.

Disturbances in lipid metabolism may result from faulty diet, failure of absorption, defect in transportation or mobilization of fat, derangement in the intrinsic metabolism of cells in the various tissues and possibly as secondary to infection or metabolic changes which may result from diseases of the endocrine or nervous system or even of mineral, protein, carbohydrate, or vitamin abnormalities.

A disorder in fat metabolism which may be encountered earliest as regards age of the patient is the peculiar condition known as sclerema neonatorum. The characteristic areas of bacon-like rigidity or firmness in the subcutaneous tissue have been attributed to local trauma or cooling. Demonstration of a physical change, a decrease in the melting point of the fat in the involved areas, has been amply made and the presence of fatty acid crystals in the involved area is seen on histological examination. Luzzatti and Hansen[2] in a study of a 3½-month-old infant with hard, firm areas over various portions of the body found lipemia to be present. The total fatty acid level of the serum was 2 to 3 times the normal value. The blood lipids were studied at various intervals during the course of the disease before and 4 hours following the administration of a cream meal. The abnormally great increase in the serum fatty acids following the fatty meal indicated that, although the ingested fat was absorbed, it was not utilized by the tissues. This appeared to confirm the clinical observation made in regard to the patient, namely, that fat in the involved areas was not available to the body for energy purposes. The clinical picture was striking due to the generally shrunken, wrinkled, dehydrated skin and the subcutaneous tissue as contrasted with the firm, filled, involved areas. As the child improved clinically, the rise in serum fatty acids became progressively less following the cream meal and the lipemia gradually disappeared. Eight months later the postprandial rise was within normal limits as was the fasting blood fat level.

Opportunity was afforded to examine the abnormal tissue histologically and chemically both when the child was first seen and again when all signs had disappeared. This appears to be the only instance in which both histologic and chemical studies have been made and compared at the time the condition was manifest and later when all signs had disappeared. Microscopic study showed characteristic necrotic areas with infiltration of epithelial and multinucleated giant cells especially at the periphery of the fat lobules, although rosettes of needle-like crystals were not seen. Biopsy taken 8 months later from a previously involved region revealed no vestige of abnormal changes in the fatty tissue. The chemical analyses of these tissues and of control subjects are summarized in *Table 1.*

There was no detectable increase in the acetone insoluble (phospholipid) fatty acids in this abnormal tissue as is evident from a comparison with the findings in the control subjects and in the same child 8 months later. Most of the fat was present as triglycerides inasmuch as the cholesterol ester fatty acids (not shown in table) were but 0.5 gram per cent. In fact, the phospholipid fatty acids and the cholesterol ester fatty acids combined were less than 3 per cent

of the total fatty acids in this abnormal tissue. It is not possible to ascertain the amount of fatty acids which are free or combined as soaps by the chemical methods employed. The chemical findings in regard to average molecular weight and average iodine number of the total fatty acids and the acetone soluble fatty acid fraction are in agreement with reports that the abnormal fat in these tissues is palmitic acid. This fatty acid has a molecular weight of 256 and is saturated. Hence, the average molecular weight of 266-268 found for the fatty acids in the involved tissue of this patient compared with those of 276-280 in the control subjects would be possible if an excess quantity of palmitic acid was present. The abnormally low iodine value of the fatty acid is also consistent with the probability of there being an excessive proportion of some saturated fatty acid present. The increase in iodine value of the fatty acids in the second specimen was definite, but the average molecular weight was not changed materially. It appears, therefore, that these chemical findings are consistent with the observation that the abnormal fatty tissues in sclerema neonatorum contain excess amounts of saturated fatty acids with a low melting point and low molecular weight. Our findings further reveal that previously involved tissue returns to normal chemically just as it does histologically and probably metabolically.

The etiology and mechanism of production of this abnormal tissue in sclerema neonatorum are not completely understood, although chilling, trauma and even inflammation have been conjectured as being causative factors. It is important, however, for the physician to know that the prognosis in this condition is better than in those conditions with which it may be confused early in the course of the disease. In the consideration of hardness of the skin and subcutaneous tissues in infants from the viewpoint of differential diagnosis one may exclude scleroderma and dermatomyositis as these are not found in children of this age. Of especial concern is the differentiation of edema neonatorum from sclerema neonatorum. The former condition is seen in debilitated infants, frequently in prematures, and very significant is the fact that here the hardened areas pit on pressure. Histologic study reveals edematous tissue with very little in the way of inflammatory change. Edema neonatorum carries a poor prognosis as death usually results in a few days. In the nonpitting types much confusion exists as to terminology and diagnosis. Sclerema neonatorum has been the designation used diagnostically in those instances wherein firm areas develop in the external tissues. There appears to be two distinct conditions, however, which have been described under this category. Ormsby[3] defines sclerema neonatorum (sclerema adiposium) as occurring in undernourished, debilitated, often premature infants who from a few days to several weeks of age quite suddenly develop hard areas which do not pit on pressure. This usually begins in the lower extremities and often becomes sufficiently generalized to produce a cadaver-like stiffness. Diarrhea is frequently associated with this condition, and systemic symptoms may be marked

Subcutaneous tissue lipid analyses on wet weight basis in a 3½-month-old infant (D.B.) with sclerematous changes, also in the same infant 8 months later, and in two control subjects.

Case	Total fatty acids			Acetone soluble fatty acids[1]			Acetone insoluble fatty acids[2]		
	Gms. Per Cent	Mol Wt	IN	Gms. Per Cent	Mol Wt	IN	Gms. Per Cent	Mol Wt	IN
D.B., age 3½ months	38.8	266	42.1	38.7	268	43.9	0.4	*	*
D.B., age 11 months	53.4	272	57.3	52.5	269	56.6	0.4	*	56.0
Control A	50.2	279	66.0	50.1	279	65.0	0.3	*	*
Control B	54.7	281	60.0	55.2	274	59.0	0.4	*	*

1 Triglyceride plus cholesterol ester acids.
2 Phospholipid fatty acids.
* Quantity insufficient for accurate analysis.

Table 1

and a subnormal temperature may be recorded. This condition has been attributed to a low triolein content of the fatty tissues causing a higher melting point of the fatty acids. Ormsby states that needle-like crystals may be seen histologically, but other authors state that microscopic examination reveals no abnormality in the tissues. Particularly important in regard to this condition is the grave prognosis. The infants succumb within a few days after the onset of the disease.

The other condition which has been frequently called sclerema neonatorum is now termed necrosis adiposa neonatorum, subcutaneous fat necrosis of the newborn or pseudosclerema. The patient studied by Luzzatti and Hansen appears to be an example of this type. There are usually deep seated indurated areas of variable size in the subcutaneous tissues, often in the cheeks and shoulders but on occasion extending to the back and buttocks. The areas cannot be pinched and do not pit on pressure. The lesions tend to disappear without specific therapy within a few weeks to several months. Although the prognosis is good it is necessary that proper nutrition be maintained. The histologic picture is typical; there is necrosis of subcutaneous fat cells with an infiltration of epithelial cells, and often multinucleated giant cells, especially at the periphery of the fat lobules. Frequently sheaths of needle-like crystals are demonstrable. Chemically it has been demonstrated that excess calcium and phosphorus are present following this foreign-body-like reaction and later calcification may be seen on x-ray examination. As previously stated, Luzzatti and Hansen also found changes in the character of the fatty acids deposited in the affected areas.

Other types of abnormality in skin and subcutaneous tissues have been studied by the author. Hansen and McQuarrie[4] have reported the results of lipid analysis of various tissues in a child who presented a bizarre clinical picture because of generalized absence of subcutaneous fat. There was hepatomegalia and splenomegalia present but the clinical condition was complicated by the subsequent development of diabetes mellitus and at death the child was also found to have cirrhosis of the liver. Because of the almost complete absence of fat in the tissues as determined chemically and histologically the authors termed the condition "lipohistiodiaresis." The skin and subcutaneous tissue taken together was found to contain 0.34 grams of fat per 100 grams wet weight in contrast to 10.0 grams in a control subject. It was impossible to find any subcutaneous fatty tissue to analyze in the child with the lipohistiodiaresis but the perirenal tissue contained 0.45 grams per cent of fat which is about one-hundredth that found in control subjects. The absence of fat in the tissues was more pronounced by far than that observed in a child with lipodystrophy progressiva. In the latter instance the subcutaneous tissue was found to contain 4.8 grams per cent of fat or about one-tenth that expected. A control subject was found to have 40.1 grams per cent of total fatty acids in a comparable area. We have seen no references in regard to tissue lipid analyses for any other child with lipohistiodiaresis but the fat content of the tissues of a child with severe cachexia secondary to a neoplasm was not nearly as markedly reduced as in our child having generalized lipodystrophy.

Information concerning the regulation of the amount and character of the fat in skin and subcutaneous tissues is incomplete; however, it is a well known clinical observation that in uncontrolled diabetes mellitus xanthomatous lesions frequently develop. It has often been stated that this phenomenon occurs because of the marked lipemia which results from a derangement in fat and carbohydrate metabolism. Lipemia occurs characteristically also in lipoid nephrosis in children yet xanthomatous lesions do not appear to develop. Serum and tissue lipid studies were made in a poorly regulated diabetic child with extensive xanthomatous lesions. The serum lipid findings in this child (R.R.) are presented in *Table 2* together with those from a child with lipoid nephrosis and an average control subject.

The lipemia in patient R.R. (*Table 2*) was quite marked being 7 to 8 times the expected average value. The greatest portion of the lipemia can be accounted for by a rise in triglyceride fatty acids (calculated value) which is probably 10 times greater than the control value. The cholesterol ester fatty acids were increased 5 to 6 times whereas the phospholipid fatty acids (acetone insoluble) were but 3 to 4 times greater than the normal value. The iodine

numbers in all fractions were relatively low. These findings indicate that in the lipemia of diabetes mellitus there is an accumulation of saturated fatty acids in the serum principally in the triglyceride fraction although other fractions also show some increase in the amount of these acids. This phenomenon of lipemia may well be due to the presence in the tissues of the fatty acids which are not available for energy use by the body. Although it is conjectured that ketone bodies accumulate in the blood and tissues of uncontrolled diabetics because of the excess burning of fat resulting from the body's inability to oxidize carbohydrate, this does not necessarily explain the production of the lipemia.

As may be seen from *Table 3* the amount of total fatty acids in the xanthomatous tissue from patient R.R. is not increased. The distribution of these fatty acids, however, is greatly altered from that in normal tissue. The triglyceride fatty acids (acetone soluble fatty acids minus cholesterol ester fatty acids) are decreased both relatively and absolutely. The phospholipids are definitely increased, and the cholesterol ester fatty acids are greatly increased. By far the most impressive finding is the great accumulation of cholesterol in the xanthomatous lesions. The high iodine number of the fatty acids indicates that there was an accumulation of unsaturated fatty acids in the xanthomatous tissue in contrast to the accumulation of saturated fatty acids in the blood. The interrelationship between the tissue and blood lipids in this abnormal metabolic state is not clear. Just what these relationships may be is difficult to conjecture and even more difficult in the light of studies by Hansen, McQuarrie, and Ziegler[5] on the patient with lipohistiodiaresis in whom it was found that even though appreciable quantities of triglyceride fatty acids were present in the serum, they were practically absent from the body tissues.

It has often been stated that the lipemia which characteristically occurs in children with the nephrotic syndrome may be the result of a compensatory phenomenon related osmotically to the hypoproteinemia which occurs in this condition. Certainly the converse does not hold true, namely, that prolonged lipemia depresses the plasma protein level. The question also may be asked, "Does faulty fat absorption limit the development of lipemia in a hypoproteinemic state?" Evidence that there is no simple relationship between hypoproteinemia and lipemia

Serum lipid values in child (R.R.) with diabetes mellitus having xanthomatous skin lesions; child (J.J.) with nephrosis, and control subject, C.

Case	Total F.A. Mg. Per Cent	IN	Acet. sol. F.A. Mg. Per Cent	IN	Acet. Insol. F.A. Mg. Per Cent	IN	Cholesterol Total Mg. Per Cent	Esters
R.R. Diabetes mellitus	2756	80	2229	73	459	100	976	599
J.J. Nephrosis	1383	80	876	77	453	87	----	----
C Control	387	106	253	99	122	118	----	----

Table 2

Lipid values on basis of wet weight of tissues from xanthomato us skin lesion in child (R.R.) with uncontrolled diabetes mellitus compared with those of skin of control subjects (G.C. and M.H.)

Case	Total F.A. Grams Per Cent	IN	Acet. Sol. F.A. Grams Per Cent	IN	Acet. Insol. F.A. Grams Per Cent	IN	Cholesterol Total Grams Per Cent	Esters Grams Per Cent
R.R. Xanthoma	4.88	94	4.28	81	0.86	—	1.84	0.65
G.C. Control	10.00	64	10.00	64	0.16	97	0.10	0.03
M.H. Control	4.80	65	----	—	----	—	0.16	0.10

Table 3

was gained from our studies in a child having cystic fibrous of the pancreas in whom there was marked edema and low blood proteins (3.26 grams total protein per 100 c. c. serum) but no albuminuria. The results of the serum lipid analysis in this child are given in *Table 4*.

It is apparent from these findings that a lipemia does not necessarily develop when hypoproteinemia exists even for fairly prolonged periods and certainly no hypercholesterolemia occurs as both the total and esterified cholesterol were quite low in this patient. It may be noted that the iodine number of the fatty acids is quite low in each of the various fractions. Luzzatti and Hansen[6] observed this to be quite a characteristic finding in patients suffering from the celiac syndrome. This phase of the lipid problem has been discussed recently in a similar review by the author.[7]

Attempts have been made to investigate various phases of disturbances in lipid metabolism such as those concerned with fat absorption (effect of bile and duodenal enzymes), fat transport (chylous ascites), fat mobilization (starvation), serum lipids in various abnormal metabolic and hormonal states, and in certain lipidoses (Hand-Schüller-Christian disease); however, detailed discussion of these entails considerations beyond the province of this presentation. Inasmuch as we have had an opportunity to carry on investigations* pertaining to the unsaturated fatty acids in nutrition most of which have been carried on in cooperation with Hilda F. Wiese, Ph.D., a few notes on this phase of the subject may not be amiss.

The discovery of Burr and Burr[8] in 1929 that certain unsaturated fatty acids were essential for the normal nutrition of rats has resulted in the necessity of altering our previous concepts of the significance of fat in the diet. Previous to this, fat in the diet was thought to be of importance only as a source of concentrated energy and as a vitamin carrier, although some attention had been given to its satiety value. The typical features of the fat deficiency syndrome in the rat are retardation in growth, development of scaliness of the tail and hair, kidney lesions with hematuria and early death. The best known of the essential fatty acids found to be effective both in the treatment and prevention of this unsaturated fatty acid deficiency syndrome are linoleic acid and arachidonic acid.

Hansen and Wiese[9] found the development of abnormal dryness of skin and hair and flaky desquamation to be the most striking finding in young dogs reared on diets extremely low in fat. Blood lipid studies by these authors suggested that dogs too are unable to synthesize the essential fatty acids.

Information concerning the significance and essentiality of certain unsaturated fatty acids in human nutrition and metabolism is indeed meager. The lack of relatively easy and accurate methods for the determination of linoleic and arachidonic acid undoubtedly contributes to the lag in our knowledge concerning these particular fatty acids. Most of the evidence which indicates that they are essential or at least may be of significance in human nutrition is indirect.

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Serum lipid values in 20-month-old girl (M.J.) with marked generalized edema of nutritional type compared with those of normal subjects and patients with celiac syndrome.

Case	Total F.A. Mg. Per Cent	Total F.A. IN	Acet. Sol. F.A. Mg. Per Cent	Acet. Sol. F.A. IN	Acet. Insol. F.A. Mg. Per Cent	Acet. Insol. F.A. IN	Cholesterol Total Mg. Per Cent	Cholesterol Esters Mg. Per Cent
M.J. Nutritional edema	253	82	163	81	75	90	98	50
Average 5 control subjects*	357	106	240	98	100	114	—	—
Average 8 patients with celiac syndrome*	314	78	209	77	95	77	145	96

* From Luzzatti and Hansen.[6]

Table 4

Studies including blood lipid determinations of patients maintained on diets very low in fat, whether experimentally or physiologically because of faulty fat absorption, indicate that the human organism does not synthesize highly unsaturated fatty acids. The blood lipid pattern produced under these conditions in human subjects is similar to that found by the author to occur in both rats and dogs. There is some indication that both the lack of fat in the diet and the addition of fats and oils rich in the unsaturated fatty acids may be concerned with the maintenance of the normal integrity of the skin in human beings. One phase of this is suggested by studies of patients with eczema.

The observation has been made that the degree of unsaturation of the serum liquid of patients with eczema tends to be comparatively low. In about four-fifths of eczematous infants under 2 years of age and a little over one-half of adult patients with eczema, the serum fatty acid iodine numbers are below the normal range. Two additional features tend to lend support to the possible significance of the unsaturated fatty acids in relation to this condition of the skin. The first of these is the clinical observation that a number of patients with chronic eczema are benefited when dietary fat such as fresh lard and certain vegetable oils (corn and linseed) is added to the diet. (These fats are known to be effective in curing the fat deficiency syndrome in experimental animals). Secondly, coincidental with improvement in the condition of the skin, the degree of unsaturation of the fatty acids of the serum in most instances has been found to return to within the normal range. Some workers have reported only suggestive and even negative results regarding the therapeutic aspects of the problem. However, the combined experience of Finnerud, Kesler, and Wiese,[10] and that of the author and his co-workers reveal that over one-half of the patients with intractable eczema are greatly benefited by the dietary inclusion of fats rich in the unsaturated fatty acids. Another one-fourth or more appear to be benefited to some degree. In some patients, of course, no difference whatsoever in the condition of the skin seems to result from this regimen; in others the good results are quite striking. In most of the recent studies, fresh lard has been the source of fat used. Most patients appear to have little difficulty in taking lard in teaspoon or tablespoon quantities, although some prefer to take it with salads as dressings, on cereals, or as a spread on crackers, toast or in sandwiches. It is felt that a therapeutic trial should comprise a period of about 2 months or so using one to two ounces per day. The effect when it is observed is not usually immediate or dramatic. This is not surprising in view of the findings of Wiese and the author,[11] that dogs suffering with marked skin changes due to a lack of fat in the diet do not become entirely normal in appearance nor do the serum lipid values return to normal until the fresh lard supplement has been continued for periods of from 4 to 6 weeks. At the present time it appears that this regimen should supplement but not substitute for a careful allergic work-up and the use of local therapeutic measures. However, it seems that our understanding of one phase of unsaturated fatty acid metabolism in relation to human nutrition will be augmented by continuation of studies along these lines.

In closing, we may state that our knowledge of essential fatty acids in metabolism and nutrition will not be complete until considerable more studies have been made by both the fundamental scientists and clinicians. The same may be said in regard to the whole field of disturbances in lipid metabolism, namely, only the cooperative efforts of the biochemist, physiologist, nutritionist, chemist, pathologist, and physician, will sufficiently clarify and simplify lipid metabolism so that it will not mystify the practitioner of medicine.

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NEWER METHODS OF HEMOSTASIS IN NEUROSURGERY*

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The common methods of blood stilling by sponge, clamp, and ligature are largely inapplicable to intracranial surgery, particularly in the presence of bleeding from the nervous tissues themselves, and any device which serves as an aid to haemostasis in these difficult operations will bring a larger number of them to a safe termination.

—*Harvey Cushing, 1911*[1]

The quotation above, from the summary of Cushing's paper of 1911, in which his hemostatic silver clip was first described, is equally applicable today. However, even at that time, which now seems early in the comparatively short history of neurosurgery, great advances had been made in hemostasis, thanks in no small measure to other contributions of Cushing himself.

In Godlee's[2] courageous but unsuccessful removal of a subcortical tumor in 1884, bleeding was controlled "by means of the galvanocautery," a use of electrosurgical methods in neurosurgery to be revived in modern form by Cushing[3 4] thirty-two years later.

In 1887, Durante[5] reported the first successful removal of an intracranial tumor. The lesion was apparently a large olfactory groove meningioma and Durante's only mention of bleeding was the casual statement that

"the haemorrhage was slight and easily controlled by the haemostatic, a tampon treated with sublimate."

From modern experiences with these exceedingly vascular tumors, one cannot help wondering how severe bleeding would have had to be to alarm Durante!

William Keen,[6] in reporting his famous case of removal of a meningioma, in 1888, dwelt somewhat longer on the problem of hemorrhage. He used cocaine to induce vasoconstriction, and employed ligatures wherever necessary. According to his report,

"The effect of cocaine was certainly happy. It contracted a number of vessels that otherwise would have required ligation."

During the ensuing years, the introduction of wax for control of bleeding from bone by Horsley[7 8] and the use of small bits of muscle applied to bleeding points (developed independently by both Horsley[9] and Cushing[1]) were the notable steps in hemostasis which appeared prior to Cushing's paper quoted above. In the latter, the use of "silver clips" introduced a revolutionary factor. The use of pledgets of absorbent cotton instead of gauze sponges, and of finger-pressure to control bleeding from the scalp had already proved valuable adjuncts and the introduction of suction to keep a clean field and reveal bleeding points was soon to provide another.

Such was the status of affairs from 1911, until 1927, with minor technical changes, but no radical departure from a basic technic in which hemostasis was nearly always the determining factor in the success or failure of any major intracranial operation. The surgeon often waited, literally for hours, for pressure and spontaneous coagulation to control a bleeding point, only to see the hemorrhage begin again when his compressing cotton was removed.

In 1927, Cushing[3 4] made his next revolutionary contribution to this problem, namely, the re-introduction of electrocoagulation by the high frequency spark-gap machine developed by Bovie. By this advance, hours were cut from brain operations and average blood loss was greatly diminished.

Many serious problems still remained, however. Bleeding from the great venous "lakes" adjacent to the longitudinal sinus is usually actually made worse by attempts at coagulation. Often it was necessary to remove large amounts

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*Permission to publish the paper has been granted by the Committee on Medical Research, A. N. Richards, Chairman.

of muscle from the patient's leg or to employ muscle from another operation. The diffuse oozing of blood from a tumor bed, the profuse bleeding from epidural spinal veins, the annoying seepage of blood from beneath the bone edges around an osteoplastic flap—these and similar sources of hemorrhage sorely taxed the circulation of the patient and the patience and ingenuity of the surgeon.

The earlier history of hemostasis has been reviewed at length in a monograph by Harvey[10] and, quite recently, in an excellent paper by Light,[11] who has played a pioneer role in developing one of the important newer methods which it is my purpose to discuss herein.

These newer advances in neurosurgical hemostasis involve two innovations: the use of thrombin as a hemostatic agent and the development of three types of absorbable sponge materials.

Thrombin, when added to the fibrinogen in blood plasma, produces almost instantaneous coagulation. Thrombin has been prepared from beef blood in greater and greater purity and concentration, notably by Seegers and his associates[12 13] and has been shown to be safe for use in human surgery.[14*]

A serious technical difficulty was present, however. Thrombin, sprayed on an area of capillary ooze, produced excellent hemostasis. But the coagulum formed by such a spray on actively bleeding vessels of larger caliber was promptly washed away by the stream of blood. If gauze or cotton, saturated with a solution of thrombin, were pressed upon such vessels, prompt hemostasis occurred. But when the tampon was removed, the clot was dislodged and bleeding recurred. There was a need, then, for an absorbable medium for the application of thrombin which could be left in place.

The first answer to this need was oxydized cellulose, developed by Yackel and Kenyon[15] and subsequently extensively investigated in animals by Virginia Frantz and her associates.[16 17] This material, consisting of partially oxydized cellulose, can be prepared as a gauze, as a cotton or as a paper. Although it has not proved to be the most desirable carrier for thrombin, it has shown valuable hemostatic uses in its own right. These uses are principally in the general surgical field where pressure-packing with an absorbable substance may prove invaluable. That oxydized cellulose can be used with thrombin satisfactorily has been shown by Uihlein, Clagett and Osterberg.[18] Recent experiments in our laboratory, as yet incomplete, suggest that this material may be useful in neurosurgery in the rare instances in which a small tight pack may be desirable. They also confirm the observations of Putnam[19] regarding the safety and ready absorbability of the cellulose when placed in the cranial cavity.

The next important development resulted from the extensive studies on the fractionation of human blood carried on under the direction of Professor Edwin Cohn, of the Department of Physical Chemistry at Harvard. Among the bi-products of plasma fractionation was fibrinogen and from this Bering[20] developed fibrin foam. Fibrin foam, when dry, is a rather friable porous substance which readily takes up large amounts of liquid. It is absorbed in body tissues and was at once employed by Ingraham and Bailey[21 22 23] as a medium for the application of thrombin in neurosurgery, with notable success. The thrombin, like the fibrin foam, was derived from human blood donated to the American Red Cross.*

After further trial by a group of neurosurgeons had proved its value and safety beyond question, it was distributed widely in the armed services and has met with wide acclaim.[24 25] In testing fibrin foam, I have had the opportunity of employing it in 344 major neurosurgical operations, and with Dr. W. F. Meacham, I[26] have confirmed its excellent hemostatic qualities, its ready absorption, with minimal reaction, and its lack of toxicity in experimental animals.

The use of thrombin with fibrin foam has proved to be a revolutionary advance in neurosurgical technic and deserves to rank with the introduction of silver clips and electrocoagulation. Small pledgets of the foam, soaked in a solution of thrombin, are held upon bleeding points for a few seconds and then left in situ.

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*For details, see the review of Light.[11]

*The use of fibrin as a hemostatic agent had been investigated many years previously by S. C. Harvey, Bost. Med. and Surg. Jour., **174**:658, 1916. Also Ann. Surg., **68**:66, 1918).

Bleeding, even from large veins ceases at once. Small arteries can be similarly controlled, but the method is not suitable for brisk arterial bleeding from larger vessels. However, as already mentioned, it is some types of venous bleeding and diffuse oozing which have defied previous hemostatic methods. This type of hemorrhage is readily controllable by thrombin.

There are two criticisms of fibrin foam, one a minor one, the other quite important. It varies in different preparations, and some are quite friable, "crumbly" and difficult to handle. With experience, this handicap is not a serious one. The second objection is that the production of even a small amount of fibrin foam requires a large quantity of human blood.

Neither of these criticisms is applicable to the third absorbable medium which has recently been developed by Correll and Wise.[27] This is an absorbable foam-like sponge prepared from gelatin. When dry, it is tough, easily cut into any desired size and thickness. It takes up many times its weight of liquid and is absorbed as rapidly as fibrin foam.

This absorbable gelatin sponge was first employed in neurosurgery by Light and Prentice,[28] both experimentally and clinically. Meacham and I[26] have also studied its hemostatic qualities and absorption in experimental animals and, with the collaboration of a group of neurosurgeons, have investigated its use clinically in a large number of neurosurgical operations. These studies were carried out with human thrombin. More recently in another series of patients operated upon by us and by the group of surgeons* listed in *Table 1,* bovine thrombin has been used in conjunction with the gelatin sponge.

The sponge has proved to be an eminently satisfactory medium in the great majority of cases and it promises to become a routine part of the neurosurgical armamentarium.

*The author is grateful for reports from the following neurosurgeons and their associates who have tested these materials: Doctors C. C. Coleman, W. M. Craig, Loyal Davis, E. F. Fincher, Gilbert Horrax, Howard Naffziger, Wilder Penfield, Bronson Ray, Ernest Sachs and Eustace Semmes.

EXPERIENCES WITH GELATIN SPONGE IN CONJUNCTION WITH BOVINE THROMBIN

Investigator	Satisfactory	Unsatisfactory
Coleman	30	0
Craig	2	0
Davis	7	0
Fincher-Swanson	25	0
Horrax-Poppen	11	0
Naffziger	3	0
Penfield	10	0
Pilcher	45	0
Ray	7	0
Sachs	29	1
Semmes	11	0
Total	180	1

Table 1

The employment of bovine thrombin has also given satisfaction. In no instance has any adverse reaction of anaphylactic or antigenic character been observed by us or reported by others. This is in accord with the observations of Light[29] and of Seegers, Warner and their associates.[14 30 31]

Thus the practical application of a physiological principle of hemostasis, which stems from, but goes far beyond the time-honored use of muscle by Horsley and Cushing, has again improved neurosurgery through reduction of blood-loss, saving of time and increased safety.

The author wishes gratefully to acknowledge the furnishing of the various materials described in this paper by their several manufacturers: the fibrin foam and human thrombin were furnished at the request of Dr. Edwin Cohn and his associates by Armour and Company, Cutter Laboratories, Eli Lilly and Company, Parke, Davis and Company, E. R. Squibb and Sons and the Upjohn Company and were produced by these manufacturers under a contract recommended by the Committee on Medical Research between the Office of Scientific Research and Development and Harvard University. The gelatin sponge and bovine thrombin were furnished by the Upjohn Company and the oxydized cellulose by Parke, Davis and Company.

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MODERN TREATMENT OF MUCOCELE OF THE FRONTAL AND ETHMOIDAL SINUSES*

SOME COMMENTS ON THE TREATMENT OF LESIONS PERTAINING TO THE ORBIT AND ADJACENT NASAL SINUSES

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Mucoceles of the frontal and ethmoidal sinuses are of interest not only to the rhinologist but to the ophthalmologist as well. Usually these patients come to the ophthalmologist first, complaining of some disturbance of vision or headache following the use of the eyes, and, as the lesion progresses, double vision occurs. Not infrequently these patients have had several changes of glasses prior to treatment of the mucocele.

Physically a globular swelling may be noted in the upper inner angle of the orbit which continues to expand, finally pressing the eye laterally and downward. There may be a parchment-like crackling upon palpation, and if the posterior wall of the frontal sinus has been eroded and the dura exposed, a pulsation may be noted.

Roentgenograms may show an absorption of the medial orbital wall and a slight increased density differing distinctly from the sharp intense density noted in an osteoma.

The treatment of this lesion is definite and precise and the success of the operation will often lie with the rhinologist who first attempts to correct this lesion.

Occasionally, a rhinologist makes a diagnosis of a mucocele and under local anesthesia removes a large part of, or as much of the mucocele as possible through the nose or antrum. You may rest assured that such a procedure means the patient is going to report later with further trouble, probably necessitating a radical external ethmoid frontal operation. Often these rhinologists will conclude that an external operation is the only operative procedure

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that should be recommended in the treatment of these cases.

We all realize that it is difficult to maintain a nasal frontal opening after any type of a radical frontal sinus operation. In most of these cases the nasal frontal passageway is completely destroyed at operation and the naso-frontal duct is eventually replaced by a hard contracting fibrous mass. The dream of the rhinologist is to construct a new duct that will be lined with epithelium, and such a duct in most cases has already been prepared for us in the development of the mucocele. Let us have a care lest it be destroyed.

If the mucocele develops in the ethmoid and frontal region there is an extension downward and bulging of the ethmoid cells into the middle meatus. The mucocele is lined with a smooth glistening epithelium more perfect than any skin graft known to surgery. Thus, with this picture in mind the surgical approach is made.

If there is a marked deviation of the nasal septum a submucous resection of the septum is performed. If the middle turbinate is large it may be split anteroposteriorly with a No. 15 Bard-Parker blade on a long slender handle. The outer half of the middle turbinate is then removed with a clean cutting through and through biting forceps of the Gruenwald type, and the floor is thus opened into the mucocele usually with a discharge of a thick brownish mucoid material, or pus, if the mucocele has become acutely infected. This opening in the floor of the mucocele is all that is required and no attempt should be made to remove any of its lateral wall. Thus the epithelial lining of this cavity is not destroyed. Following the opening in the nose, pressure with a finger will usually reduce the globular swelling in the orbit. A one per cent solution of novocaine may be injected here if the procedure is painful.

The patient usually leaves the hospital within one or two days and the only treatment necessary is to keep down the granulations, while healing, by the occasional application of a five per cent solution of silver nitrate.

I[1] have followed this proceure very carefully in the treatment of mucoceles over a period of twelve years, and so far have had no recurrences where this procedure was used at the primary operation.

You will find this operation, if carefully done, most gratifying to the surgeon and the patient.

Since I am speaking before both ophthalmologists and otolaryngologists I will mention the treatment of several lesions of common interest to both. I would like to emphasize the importance of early trephine of the frontal sinus in acute ethmoid frontal infections following swimming. Of course, today I must also emphasize the early use of penicillin, 20,000 units every three hours intramuscularly in these cases, combined with sulfadiazine, usually fifteen grains by mouth every four hours with thirty grains or more of soda bicarbonate. If there is evidence of improvement within twelve or twenty-four hours, a trephine operation may not be necessary.

In acute intraorbital infections I have been impressed with the remarkable results obtained by the use of the combined penicillin and sulfadiazine treatment. So long as the eye is movable, incision and drainage can usually wait. But once the eye shows progressive signs of fixing, incision and drainage are imperative.

In most of these lesions requiring operation the abscess is found under the periosteum in the region of the ethmoid cells, and a curved incision made midway between the inner canthus of the eye and the midline of the nose, three-fourths of an inch in length, will suffice when carried down through the periosteum. At this time no attempt should be made at radical surgery in the ethmoid cells or frontal sinus. Occasionally a few anterior ethmoid cells are opened into the nose, but it is safe to wait, once external drainage is established, for the acute infection to subside. Indications for radical surgery later have been rare in my experience where this procedure has been followed.

It is very easy to mistake an acute suppuration of the ethmoid cells in an infant for a dacryocystitis. Simple incision and drainage as mentioned above are sometimes necessary and recovery usually occurs without sinus surgery later.

Rarely one sees a malignant exophthalmos in which there is marked protrusion of the eye, often accompanied by lacrimation, photophobia,

burning and retrobulbar pain. These cases usually follow thyroidectomy but may occur primarily. Sewall[2] suggested an orbital decompression by removal of the ethmoid sinuses, the floor of the frontal, and the floor of the orbit if necessary. The lamina papyracea should be removed as far back as the optic foramen and it may be well to incise the orbital fascia. Kistner[3] was able to effect a recession of the exophthalmos by three to four mm. in four weeks, and there was complete subsidence of symptoms in a few days and gradual improvement in vision. Schall[4] and Reagan have recently reported excellent results following this procedure.

Corneal ulcers, unless traumatic in origin, should always make one suspicious of a chronic infection of a maxillary sinus. In these cases I would not depend upon roentgenogram alone without the injection of iodized oil, which will make it possible for one to read even a one to two mm. thickening of the sinus membrane.

If the membrane shows two or three mm. thickening, with corneal ulcer and possibly a history of bad upper teeth or repeated sinus infections, a large opening should be made under the inferior turbinate into the maxillary sinus. Making this opening is not a simple operation. I have described this operation in detail[5] and each year in teaching courses emphasize its importance. Cases showing only a small opening high under the inferior turbinate some months after the operation are a failure only because the operation was improperly performed. Even the instruments for this operation must be definitely and carefully selected, and any variation from the procedure in my hands has resulted in failure.

An acute optic neuritis is often noted first by the patient in the morning. They awaken and find that they have a central blindness which apparently developed during the night. These cases do not usually show any signs of pus or infection in the ethmoid cells or sphenoid, yet, frequently the vision returns immediately after opening the posterior ethmoid cells or sphenoid. I[6] have in the past ten years, however, learned that the injection of iodized oil in the sphenoid will produce the same spectacular return of vision, if these patients are to be helped at all by any operative manipulations in this area.

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556 Doctors Building

ECTOPIC PREGNANCY*

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and

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Ectopic pregnancy is an important cause of maternal deaths. Every eighteenth such death in Philadelphia, every sixteenth in New York City, and every twelfth in Chicago was due to this cause during the decade 1931-1940 as reported by Williams and Corbet.[1]

During the ten years, 1930 through 1939, every eleventh puerperal death in Richmond was due to ectopic gestation, and during the past five years, 1940 through 1944, every seventeenth such death has been due to this cause.[2 3 4]

Treatment is fairly well standardized; it is in diagnosis that we fail. An analysis of the deaths in any clinic shows the difficulty one encounters in making an accurate diagnosis of this frequently fatal accident of pregnancy.[6 7]

In 1941 we[8] reported a series of 150 cases of ectopic pregnancy, with a gross mortality of 8 per cent, and an operative mortality of 5.4 per cent. One-third of the deaths occurred before operation. During the past five years, 1940 through 1944, we[9] have studied an additional one hundred and fifteen cases of ectopic gesta-

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tion admitted to the Medical College hospitals, with a gross mortality of 1.7 per cent. We attribute this reduction in mortality to a more accurate early diagnosis of this accident, early operation, frequent transfusions, and more extensive use of oxygen therapy during and after operation.

In this paper we will report in detail one hundred and fifteen cases treated during the past five years and review the important points in diagnosis based on the total series of two hundred and sixty-five cases.

Ectopic pregnancy is a gestation which occurs outside the cavity of the uterus. It may be located in the broad ligament, the peritoneal cavity, the ovary or any portion of the fallopian tube, including the interstitial portion.

The pathology of this condition has been investigated by many workers and extensively reported in the literature. We have no new information to add to this. Careful analysis of our cases does indicate that underdevelopment of the female organs of generation and endocrine conditions frequently associated with sterility deserve more extensive study and should be considered a cause of ectopic gestation in many patients who have never had or shown any evidence of salpingitis or pelvic inflammatory disease.

Titus[5] says that ectopic gestation occurs once in every 300 pregnancies. Stander[10] reports an incidence of one in 403 pregnancies at New York Lying-In Hospital. In the Medical College hospitals the incidence was one in every 70 obstetric admissions. This wide variation in occurrence of ectopic gestation in hospital admissions probably depends more on the type of obstetrical case admitted than the section of country from which the reports originate. Our ward service admits only abnormal cases, and the normal cases are attended at home by the home delivery service.

Schumann[11] says that 70 per cent of his cases of ectopic pregnancy occurred between the ages of twenty-four and thirty-three years inclusive. He thinks this corresponds with the first ten years of married life for most women.

Table 1 shows that during the last five years two-thirds of our patients were between the ages of 20 and 30 years, and 84 per cent were between the ages of 20 and 35 years. The youngest was 16 years of age, and the oldest was 42 years of age.

Table 2 shows that 30 per cent of our patients were white and 69 per cent were Negroes. These percentages correspond with our total admissions according to race.

Forty-six of the patients, or 40 per cent, were non-residents of Richmond, and 69 of the patients, or 60 per cent, were residents of Richmond. This also corresponds with our usual hospital admissions. The Medical College hospitals admit the abnormal obstetrical patients from a large surrounding territory, as far as one hundred miles in some directions.

Ectopic pregnancy should be suspected in any woman in the child-bearing age who has abdominal pain, particularly if it is located in the pelvis and unilateral in type. The diagnosis of ectopic gestation is more probable if the patient

AGE

Five Years, 1940 through 1944

Age (years)	Patients (Number)	Per Cent
Under 20	3	2.61
20 to 25	35	30.42
25 to 30	38	33.05
30 to 35	24	20.87
35 to 40	11	9.57
40 or over	4	3.48

73 patients, or 63 per cent of the entire series, were between the ages of 20 and 30 years.

In a larger series, 1930 through 1939, we found that 76 per cent of the patients were between the ages of 20 and 30 years.

Table 1

RACE

Five Years, 1940 through 1944

White	35 patients, or 30.41 per cent
Negro	80 patients, or 69.55 per cent

RACE

Ten Years, 1930 through 1939

White	59 patients, or 39.33 per cent
Negro	91 patients, or 60.66 per cent

Table 2

has a history of amenorrhea or irregular slight vaginal spotting or bleeding. The presence of a unilateral, exquisitely tender, boggy mass in the pelvis increases the probability of this accident.

With the possibility of an extra-uterine pregnancy in mind, the physician should analyze the patient's history and symptoms in an attempt to decide whether she has an acute rupture of the tube or pregnancy, or a leaking or previously ruptured ectopic which has become walled off and developed as an abnormal pelvic mass, usually a hematocele. The first condition usually presents the typical textbook picture of ruptured ectopic pregnancy with an acute sudden onset, sharp pain, a feeling of faintness, or actual syncope, accompanied by an increase in pulse rate, a drop in blood pressure, and rapid decrease in red cells and hemoglobin. The indication for immediate operation is clear.

The second condition, where a hematoma or leaking tube has formed a pelvic mass and become walled off, often taxes our diagnostic ability to the limit. One should rule out pelvic inflammatory disease and small pelvic tumors before operating upon these patients.

We have divided our cases into two groups: the first group admitted with symptoms of an acute rupture, and the second group admitted with a tender pelvic mass, usually unilateral, and a history of pelvic pain for several days or weeks. This differentiation was discussed by Schumann in his excellent monograph on "Ectopic Pregnancy."

Seventy-eight, or 67 per cent, of our patients were admitted with an acute rupture of the pregnancy, and thirty-seven patients, or 32 per cent, were admitted with a pelvic mass.

Sharp lancinating or cutting pelvic pain associated with fainting was recorded ten times more frequently in the acutely ruptured cases than it was in cases with a pelvic mass. Pelvic pain of a dull aching type was recorded three times more frequently in patients with a pelvic mass than it was in those with an acute rupture, and cramplike pelvic pain twice as frequently in the first group as it was in the second. Shoulder pain was eight times more frequent in the acutely ruptured patients than it was in those with a pelvic mass. DeLee and Greenhill[12] say that early in pregnancy the patient with an ectopic

"complains of pains in the lower abdomen, especially on the affected side, cramplike due to uterine contractions and tubal distention."

We believe these pains are due to early hemorrhage into the tube wall often before there is a leak of blood into the peritoneal cavity.

Slight vaginal bleeding or spotting was recorded twice as often in patients with a pelvic mass as in those with an acute rupture of the ectopic. Seventy-eight per cent of the present series had some vaginal bleeding. This corresponds with the vaginal bleeding reported in 74 per cent of our first 150 cases of ectopic gestation. It is interesting to note that the only patient in either series who passed large clots also had multiple uterine fibroids. None of our patients had profuse vaginal bleeding. This is a most useful point in making a differential diagnosis when incomplete abortion is suspected.

There was no history of amenorrhea in 48 patients. The incidence of acute rupture of the tube was the same in those patients with no amenorrhea as it was for those who had missed one or more menses.

Many of the patients in this series were questioned again by one of the authors after operation. We found that frequently the patient said she had not missed a menstrual period, but actually the vaginal bleeding she had noticed

PAIN

Five Years, 1940 through 1944

	Number Patients	Per Cent
None	0	0.00
Shoulder pain	13	11.30
Dull ache	14	12.17
Cramp	66	57.39
Sharp with fainting	34	29.56
Sharp without fainting	41	35.65

Pain is the most common symptom of ectopic gestation. Pelvic pain, either cramplike or dull aching, was encountered in 82 per cent of the first 150 cases we reported, and 80 per cent of the present series. Fainting is less frequent than is usually taught. It was reported in 17 per cent of our first series and 29 per cent of the present series.

Table 3

occurred either before or after her menses had been due, and it was abnormal in amount and duration. Only 37 patients had missed more than one menstrual period. Two out of every three patients sought medical care and were operated upon before the eighth week of pregnancy.

A rapid pulse is one of the most characteristic findings in ruptured ectopic gestation. The pulse rate was below 80 in four patients, or 3 per cent, of this series, and the pulse rate was above 90 per minute in two out of every three cases. This corresponds with the findings in our first series, in which the pulse rate was below 80 in 2 per cent of the cases and above 90 in 66 per cent of the cases. The pulse rate is rapid in both the acutely ruptured cases, and those patients with a pelvic mass due to ruptured ectopic pregnancy.

The blood pressure is usually normal in the patients with a pelvic mass and below 100 systolic most frequently in the acutely ruptured cases. The pulse rate and volume of the pulse will give a more accurate indication as to the condition of the patient who has recovered from the initial shock than will the blood pressure.

The temperature readings give useful information, especially in the differential diagnosis. In three out of every four patients the temperature was below 100°, and in 96 per cent of our patients the temperature was below 101°. In no case was it above 103°, even after the patient had a pelvic examination. We consider the combination of rapid pulse and slight elevation of temperature a valuable aid in ruling out acute or subsiding pelvic inflammatory disease.

The white cell count was below 10,000 in almost one-half of the patients and below 15,000 in 77 patients, or 67 per cent of the cases. The white cell count increases immediately after rupture of an ectopic, but usually drops to normal within 24 hours unless there is a recurrence of the bleeding. The white count is usually lower in the presence of a pelvic mass, due to an ectopic pregnancy, than it is when the pelvic mass is of an inflammatory origin.

The red cell count is low most frequently in the acutely ruptured cases. It increases more rapidly than the hemoglobin in the cases that become walled off and stop bleeding. One of our patients with a hemoglobin of 12 per cent recovered.

We do not believe in posterior colpotomy or puncture of the cul-de-sac with an aspirating needle for the diagnosis of ruptured ectopic. In the presence of an organized clot, no blood will escape through the needle. This procedure also increases the danger of infection. Schumann emphasized this in his monograph in 1921.

Bimanual pelvic examination was resorted to in over 90 per cent of our cases. In a few cases, the history and symptoms made the diagnosis so evident that it was thought unwise to subject the patients to further examination. Manipulation of the cervix caused severe pain in most of the patients. Cervical manipulation did not cause pain in one unruptured cornual pregnancy and several unruptured tubal pregnancies. Un-

VAGINAL BLEEDING
Five Years, 1940 through 1944

	Number Patients	Per Cent
No bleeding	26	22.61
Abnormal menses	27	23.48
Spotting	35	30.42
Intermittent bleeding	43	37.39
Continuous slight bleeding	10	8.70
Profuse bleeding	0	0.00
Clots, small (diameter 1 cm. or less)	17	14.78
Clots, large (associated with large fibroid)	1	0.87

Bloody vaginal discharge occurs in 3 out of every 4 cases of ectopic gestation, but it is rarely, if ever, profuse unless uterine fibroids or some other complication is present.

Table 4

PULSE RATE
Five Years, 1940 through 1944.

	Patients (Number)	Per Cent
Below 80	4	3.47
80 to 90	26	22.60
90 to 100	29	25.21
100 to 110	27	23.47
110 to 120	9	7.83
120 or above	20	17.33

The pulse rate on admission was above eighty in 96 per cent of the patients, and above ninety in 74 per cent of the patients.

Table 5

fortunately, several of our patients went into shock soon after they were examined in the emergency or admitting rooms. While it is desirable for interns and residents to do pelvic examinations, both as an aid in diagnosis and for their own experience, I must emphasize the importance of limiting pelvic examinations, and observing extreme gentleness in doing a pelvic examination on any patient when ectopic pregnancy is suspected, or a possibility.

Eight of the patients in this series, 6.9 per cent, or one in fourteen, had previously been operated upon for ectopic gestation. Titus says that Apajalahti found that within a period of four years, 7.3 per cent of all patients with an ectopic pregnancy on one side had a repetition of the condition on the opposite side.

One of our patients had a recurrence of an ectopic gestation on the opposite side within eight months of the first operation.

Two patients had cornual pregnancies, an incidence of 1.7 per cent.

One had an abdominal pregnancy and was operated upon at the fourth month.

A patient previously reported, had a coexisting ectopic pregnancy and an intra-uterine pregnancy. The ectopic pregnancy was in the right fallopian tube. It ruptured about the eighth week and was removed by laparotomy at that time. The intra-uterine pregnancy went to term and was delivered seven months after the operation for ectopic pregnancy. The baby was normal and the mother's convalescence was uneventful.

The diagnosis of ectopic pregnancy was made prior to operation in 103 of the 115 cases, or 89 per cent. In the remaining 12 cases, the primary diagnosis was not ectopic gestation, but this was a second or third diagnosis in many of these cases. A patient in this group had intestinal obstruction, and a ruptured ectopic. Another was thought to have a malignancy. She had intestinal obstruction and central necrosis of the liver with a leaking ectopic pregnancy.

We believe that early operation was partially responsible for the reduction in mortality in this series of cases. Fifty-eight patients, or 50 per cent, were operated upon within twelve hours after admission to the hospital. In our first series only 40 per cent of the patients were operated upon within twenty-four hours after admission to the hospital.

DEATHS

H. W., age 37, colored, para 7, was admitted January 2, 1944, to the Surgical Service, St. Philip Hospital, with a history of severe abdominal pain for the previous four weeks. At times the pain was cramplike. The last menses were not accurately recorded. She thought she had menstruated during the month before admission. Her temperature was 101.5°, pulse 120, and she was severely ill, very jaundiced, with abdomen distended. There were no fluid levels, but distention of the entire intestinal tract. Pelvic examination revealed tenderness in both adnexal regions, and on manipulation of the cervix. Her white cell count was 7,800, polymorphonuclears were 74 per cent, and hemoglobin 46 per cent. She was operated upon on January 3 through a right rectus incision for suspected malignancy and intestinal obstruction. She was found to have a ruptured ectopic of the left tube and blood in the peritoneal cavity. She was transfused five times, receiving a total of 2,500 c. c. of whole blood during and after operation. She died seven days postoperatively. The day before death, the red cell count was 4,000,000, and hemoglobin was 84 per cent. The icteric index was 36 units on admission, and it increased to 61 units before death. Autopsy revealed central necrosis of the liver and peritonitis.

P. M., a 36-year-old colored woman, para 2, was admitted to St. Philip Hospital at 8:00 p.m., June 8, 1944, in shock. A history was obtained of a full term delivery in January, five months before admission. She menstruated last on March 30, 1944, two months before admission to the hospital, and had been sick ever since with cramplike abdominal and pelvic pain, and occasional fainting spells. She was seen by her local physician twenty-four hours before hospitalization. On admission, she was comatose, answered questions

MORTALITY Five Years, 1940 through 1944	
Total number cases	115
Two patients died. Mortality 1.7 per cent	

MORTALITY Ten Years, 1930 through 1939	
Total number cases	150
Twelve patients died. Mortality 8 per cent	
Operative mortality 5.4 per cent	
(Four patients died without operation)	

Table 6

incoherently, and showed typical air hunger. Her temperature was 100.5°, pulse 140, respiration 30, blood pressure, systolic 94, diastolic 60. Blood examination showed red cells 1,670,000, hemoglobin 24 per cent, white cells 18,000, and polymorphonuclears 82 per cent. This patient was operated upon soon after admission. There was a pregnancy mass the size of an orange in the right fallopian tube, and 1,000 c. c. of liquid and clotted blood in the peritoneal cavity. The right tube was removed. The patient was given 500 c. c. of whole blood during the operation and this was followed by 500 c. c. of plasma. She left the operating room in better condition than she was when admitted. Her blood pressure was: systolic 120, diastolic 60. Her pulse was 140. She died suddenly three hours after operation. Permission for autopsy could not be obtained.

These two cases illustrate the importance of an early correct diagnosis and early operation. Some patients with ectopic pregnancies too long neglected cannot be saved by hospitalization and operation.

TREATMENT

Titus says:

"Expectant treatment for an ectopic pregnancy at any stage and in any location is highly hazardous, as the sac may rupture without a moment's warning and the patient die from the ensuing hemorrhage."

We agree with this statement and wish to emphasize the following:

Operation for removal of an ectopic pregnancy should be done as rapidly as possible after the diagnosis is made.

Morphine or "pantopon" both before and after the operation decreases the patient's pain, apprehension, and restlessness. In most cases any form of stimulation or intravenous injection to raise the blood pressure should be avoided until the bleeding vessels can be ligated. We usually start a transfusion just as the patient is ready for operation. The volume of blood a patient needs corresponds with the amount she has lost. This can be calculated fairly accurately. We have found ether anesthesia with a high concentration of oxygen very satisfactory even in our worst cases.

The operation should be completed as rapidly as is compatible with good surgery. It should be limited to removal of the ectopic pregnancy and control of the hemorrhage.

The use of continuous oxygen therapy during and after operation has been valuable in the treatment of our patients.

In conclusion, we should like to repeat the following points as an aid in the early diagnosis of ectopic gestation and consequently, the successful treatment of this accident of pregnancy.

(1) There is abdominal pain, usually unilateral, frequently described as sharp, lancinating, stabbing or tearing, but sometimes cramplike, and usually intermittent even though dull. The pain usually has a definite onset and is frequently noticed after exertion, defecation, and sometimes after intercourse. The severity of shock is in proportion to the rapidity of onset as well as the amount of internal hemorrhage.

(2) A careful history reveals an irregularity of menses, either in interval or amount and duration of flow. Amenorrhea for one month or more is frequent in ectopic gestation.

(3) The presence of a unilateral tender boggy pelvic mass was diagnosed in sixty of our patients, or 51 per cent.

(4) Manipulation or pressure on the cervix causes severe pain in most cases.

(5) Slight bloody vaginal discharge was observed in 75 per cent of our patients.

(6) A rapid pulse rate, associated with low hemoglobin, and normal or slightly elevated temperature is very suggestive of ruptured ectopic gestation.

(7) Pelvic examination should be extremely gentle and limited to one if possible.

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PRINCIPLES OF PENICILLIN THERAPY*

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Penicillin, in the treatment of certain infections due to specific organisms, has been used universally for some time and many observations have been recorded. This is, therefore, a favorable opportunity to review past experiences and present knowledge with the idea of formulating some principles which may serve as a guide in the use of this drug. From the vast literature on the subject, it is possible to obtain information regarding the indications and contraindications for the use of penicillin and to reach stable conclusions on which to base a rationale for proper dosage and methods of administration.

There are several important indications for the use of penicillin which have become apparent during the period of study and investigation of this drug. First, its use is important in the treatment of diseases due to bacteria which are known to be susceptible to its action. Textbooks[1 2 3] and papers[4 5] on the subject list these organisms in detail. Suffice it to say that most gram positive cocci are susceptible, but show varying degrees of sensitivity. Of the gram negative diplococci, Neisseria gonococcus and Neisseria intracellularis are sensitive. The anthrax bacillus, important strains of the clostridia and the spirochetes, Cornyebacterium diphtheriae, and Actinomyces bovis have also been shown to be sensitive. Penicillin should be used, therefore, to treat infections due to these organisms.

The use of penicillin is indicated when safety and absence of toxicity to the patient are of prime importance. This occurs when the patient is severely debilitated or extremely ill. Under such circumstances, the use of a sulfonamide may cause more harm than good. In this connection, it is important to mention meningococcus meningitis. Although most strains of meningococci are sensitive to penicillin, a few are not. For the most part, therefore, since this infection responds readily to sulfadiazine, this drug is the one of choice in the treatment of most cases of this disease. However, when a patient with meningococcus meningitis is first seen in shock and is very seriously ill, it may be dangerous to begin therapy with intravenous sodium sulfadiazine. Under such conditions, the initial administration of penicillin both systemically and intrathecally is indicated until shock has been successfully combatted; then sulfadiazine can be safely administered. Penicillin is a safe drug to use when kidney or liver disease is present. While a sulfonamide may further injure an already damaged kidney, penicillin is not harmful, and actually when renal function is depressed, higher blood levels of penicillin can be maintained more easily. Of course, when a patient is known to be sensitive to the sulfonamides, penicillin should be used in infections where both drugs are known to be effective.

Thirdly, penicillin is indicated in the treatment of mixed infections where one or more of the etiological organisms is penicillin-sensitive, even though other organisms contributing to the infection are known to be completely resistant. Such a situation exists when a patient with a gram negative bacillary infection or an infection due to a virus or the rickettsiae develops, in addition, an infection caused by a penicillin sensitive organism.

There are certain serious infections in which the causative organism is equally sensitive to both penicillin and the sulfonamides, and both drugs should be used. This situation arises, for example, in the case of infections of the meninges through which penicillin diffuses poorly. Waring and Smith[6] have combined penicillin and the sulfonamides in the treatment of pneumococcus meningitis with marked reduction in the expected mortality. Whether this is due to true synergism or not will be discussed later.

The contraindications to the use of penicillin are very few in number. It is obvious that this drug will be ineffective and should not be employed to treat infections due to penicillin-resistant organisms which include gram negative bacilli, viruses and the rickettsiae. Contraindications to the use of the drug on the basis of toxic reactions are extremely rare. With improved methods of purification, toxic reactions have occurred less and less frequently. The ill

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effects which have been attributed to penicillin are for the most part in the nature of sensitivity or allergic reactions such as urticaria, and dermatitis. These may actually be caused by the impurities in the preparation, although Welch and Rostenberg[7] have reported tuberculin-like skin reactions due to crystalline penicillin. On very rare occasions, skin reactions are severe enough to preclude further use of penicillin because of the danger of precipitating exfoliative dermatitis.

There are several rather controversial points which should be considered when a discussion of the subject of penicillin is undertaken. One of these is penicillin resistance. This phenomenon may occur under three circumstances. In the first place, certain organisms such as the gram negative bacilli, the viruses, and the rickettsiae are very highly resistant to the action of penicillin. Some of these insensitive organisms, for example E. coli, have been found to produce an enzyme-like substance, "penicillinase," which Abraham and Chain[8] have shown inactivates the drug. In the second place, there are those species of organisms which are usually sensitive to penicillin, but of which certain strains are resistant. For example, Rammelkamp and Maxon,[9] and Spink and his associates[10] have observed that ten per cent of the strains of staphylococcus isolated from clinical sources are resistant to penicillin. Kirby[11] was able to demonstrate that resistant strains of staphylococci produce a penicillinase-like substance. Certain strains of meningococci may also be naturally resistant to penicillin. Finally, there are organisms which develop resistance only after continued exposure to penicillin.

In contrast to experience with the sulfonamides, the development of penicillin resistance during the course of treatment is unusual and for the most part is clinically unimportant. Staphylococci, however, are more prone to become resistant than other organisms, especially if dosage is initially inadequate. In the case diagrammatically represented by *Fig. 1,* the staphylococcus isolated at the start of therapy was penicillin sensitive. Results of continued treatment were unsatisfactory and the staphylococcus isolated later was highly resistant *in vitro.*

The problem of synergism is an unsolved one. There is no definite evidence as to whether or not penicillin and some of the sulfonamides exert a true synergistic action when used in

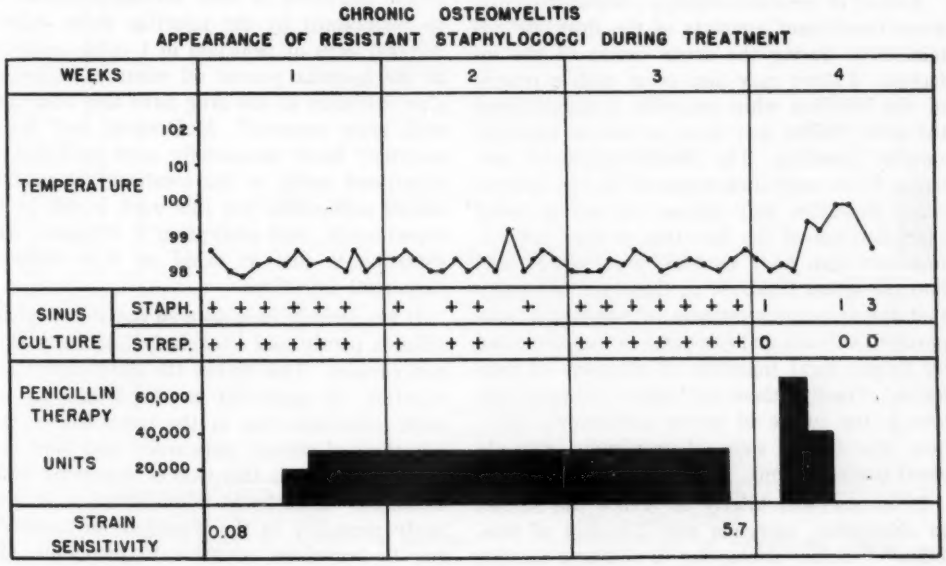

Fig. 1
(Taken from article by Rammelkamp and Kirby in press.)

combination. There is inconclusive data supporting both sides of the argument.[13 14 15] It is probable, however, that the concentration of penicillin necessary for effective bacteriostatic action is great enough so that no significant difference is produced by the concomitant administration of a sulfonamide. It should be pointed out, however, that the use of any one of the sulfonamides with penicillin, while usually unnecessary, is not harmful. In the treatment of some serious infections, when diffusion and penetration of penicillin into the infected area is known to be inadequate, simultaneous administration of a sulfonamide may be very desirable.

Penicillin, when properly used against a sensitive organism, is almost always effective. But there are times when penicillin, even when apparently properly administered, appears to fail.[16] Several factors may be responsible for these apparent failures. In the first place, the etiological organism may be insensitive either because it belongs to a totally resistant species such as E. coli, or because it is a resistant strain of an ordinarily sensitive species such as the staphylococcus, or because resistance may have developed during the course of treatment.

Failure of penicillin therapy occurs frequently when insufficient amounts of the drug are administered during the acute course of the infection. Failure may also occur with a relapse of the infection when penicillin is discontinued too soon. Failure may occur because of improper surgical handling. The administration of penicillin is no contraindication to proper surgical care. Penicillin may appear to fail in some cases because of the fact that it does not diffuse well into body cavities, joint spaces, and into the spinal fluid. It is, therefore, important that the systemic treatment of meningitis, suppurative arthritis and empyema be supplemented by proper local injection of solutions of penicillin. Finally, there are those patients seen late in the course of severe fulminating infection who die in spite of seemingly adequate blood concentrations.

It is now well briefly to review the studies on absorption, excretion and diffusion of penicillin[12 17] before attempting to outline a feasible plan for ideal treatment of an infection with penicillin. The chief disadvantage of penicillin in saline solution is the rapidity with which it is absorbed and excreted. When injected intramuscularly, maximal concentrations in the blood are reached within 15 to 20 minutes. Thus, absorption is so rapid that it is unnecessary to begin penicillin therapy with an initial intravenous injection. But once absorbed, penicillin is excreted very rapidly, to such an extent that within 2 hours 80 per cent can be recovered from the urine. It is important to note that doubling an intramuscular dose of penicillin in saline prolongs the duration of detectable levels by only one-third. For example, if 50,000 units be injected intramuscularly, detectable blood levels persist for three hours. If 100,000 units be administered, detectable levels persist only about four hours.

Efforts are being made to perfect methods of delaying the absorption of penicillin by mixing it with beeswax and peanut oil,[18] by the use of vasoconstrictors[19] and by the application of cold compresses near the sight of injection.[20] The most promising of these methods at present is the intramuscular injection of penicillin beeswax peanut oil mixtures devised by Romansky.[18] Kirby[21] and Romansky[22] have both demonstrated convincingly that blood levels effective in the treatment of most serious infections can be maintained by the injection twice daily of 300,000 units of penicillin in 1 cubic centimeter in the beeswax peanut oil mixture. Efforts to slow excretion of the drug have also been made with some success.[23] McDermott and his associates[24] have successfully used penicillin administered orally in the treatment of pneumococcus pneumonia, but this work is still largely experimental, and absorption is irregular, while excretion is just as rapid as it is following parenteral injections.

It has already been pointed out that penicillin diffuses poorly and irregularly into body fluids and cavities. This makes the concomitant local injection of penicillin as important as systemic administration in the treatment of most infections of pleural, pericardial and joint cavities. Especially is this true of infections of the meninges. Intrathecal administration is absolutely necessary in the treatment of meningitis due to organisms sensitive to penicillin. The one exception to the use of both intrathecal and parenteral injections in meningitis, in which re-

sults with intramuscular injections alone appear to be excellent, is syphilitic meningitis.

If penicillin is to be used properly and effectively, adequate levels of the drug must be maintained at the site of the infection for a sufficient length of time to insure complete cure. Three questions must now be answered: what levels are considered adequate; how best can these levels be maintained; and how long should these levels be continued.

Levels which are considered adequate vary with different species of sensitive organisms. For example, among the gram positive cocci which are penicillin sensitive, staphylococci in general have been shown to be relatively resistant. Higher concentrations of penicillin in the blood are required for maximal bacteriostatic effect in the treatment of staphylococcal infections than are required in treating infections due to B-hemolytic streptococci which are notably sensitive to the action of the drug. In addition to the staphylococcus, many strains of Streptococcus viridans and nonhemolytic streptococci should be included in the resistant group. Because of the serious nature of infections such as syphilis, diphtheria and gas gangrene, the organisms causing these diseases should also be regarded as highly resistant from a therapeutic standpoint until more information is available concerning their susceptibility both *in vivo* and *in vitro*. Organisms other than B-hemolytic streptococci which may be considered highly sensitive are the gonococcus and pneumococcus. Strains of intermediate sensitivity are represented by the meningococcus.

Now, obviously, because of the difference in their sensitivity, the same dosage of penicillin which results in maximally effective blood concentrations in the treatment of an infection due to B-hemolytic streptococci would be significantly less than that needed for optimal treatment of an infection due to the markedly more

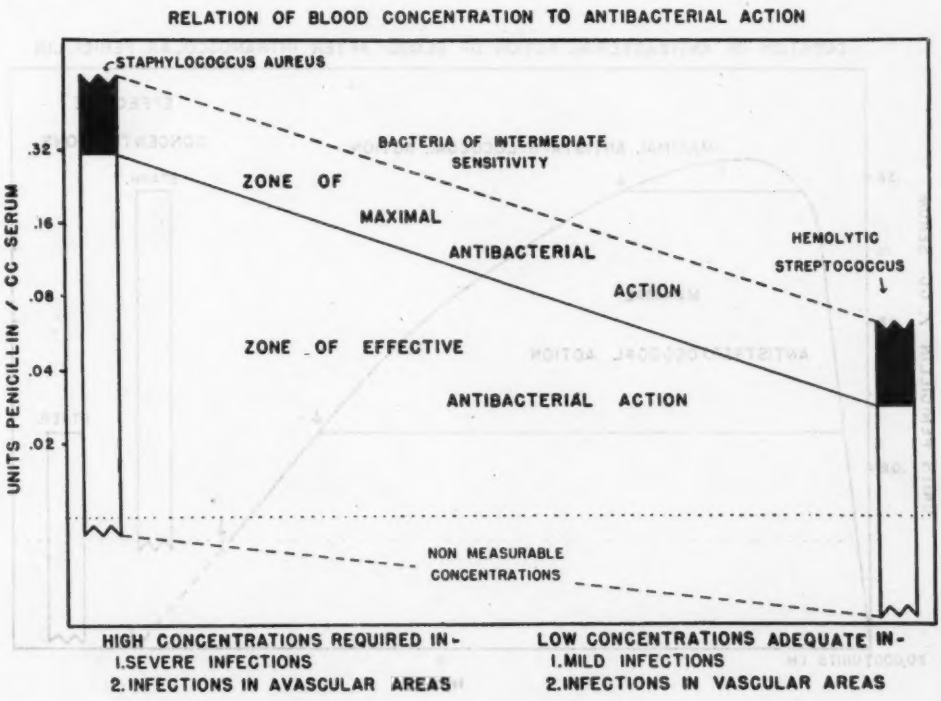

Fig. 2
(Taken from article by Rammelkamp and Kirby in press.)

resistant staphylococcus. Other factors of importance in determining the size of the dose and necessary blood levels are the severity of the infection, the vascularity of the area involved and the barriers through which penicillin must diffuse or penetrate in order to come in contact with the infecting organisms. *Fig. 2*, taken from a paper by Rammelkamp and Kirby,[12] summarizes diagrammatically the broad relationships of the concentrations of penicillin in the blood stream to the sensitivity of various organisms as well as the other factors. As can be seen, a blood level of penicillin of 0.32 units per c. c. is necessary for a maximal antibacterial activity against organisms as resistant as staphylococci, while a concentration of only 0.04 units per cubic centimeter is necessary for maximal antibacterial action against the sensitive organisms. Ideally, levels exerting a maximal antibacterial action should be maintained throughout the treatment of an infection. It can be seen, however, that there are zones of effective antibacterial action which are lower than the optimal levels. *Fig. 3*[12] presents the relationship of these zones of antibacterial activity to blood levels obtained with an intramuscular injection of 20,000 units of penicillin in saline. Maximal action against the staphylococcus is produced by this dose for a period of only about one hour while the same dose produces levels of maximal activity against a sensitive strain such as the hemolytic streptococcus lasting almost three hours. Levels which are definitely bacteriostatic, although not maximal, persist for longer periods, as is indicated.

It is not within the scope of this paper to make specific recommendations of dosages for each type of infection, but from these figures it is possible to plan a rational scheme of therapy for various infections. In treating staphylococcal infections, and infections due to other relatively resistant organisms, injections of 25,000 units every two hours produce optimal continuous levels in the blood stream; for hemolytic strep-

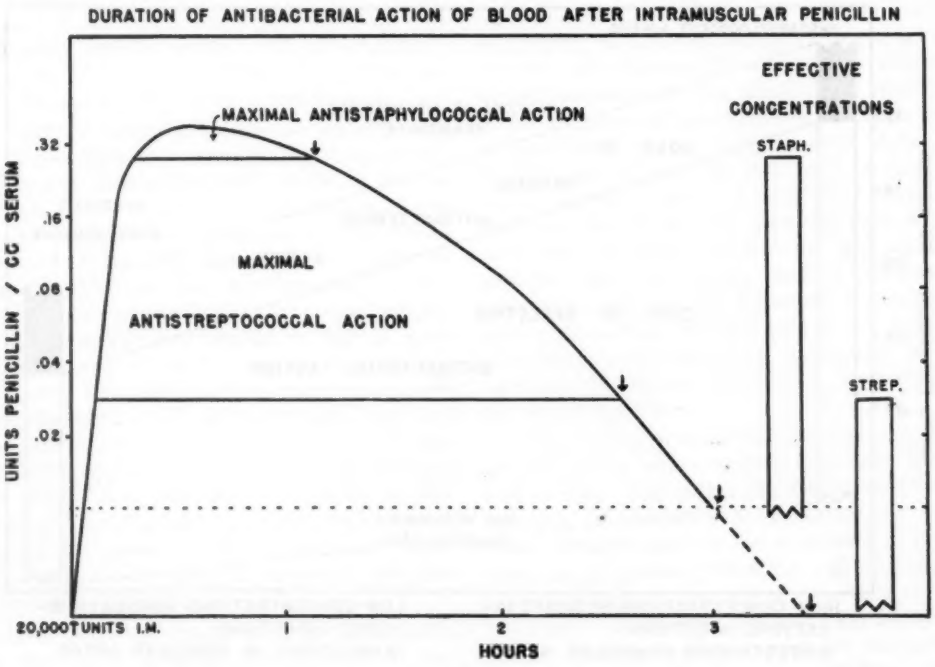

Fig. 3

(Taken from article by Rammelkamp and Kirby in press.)

(Arrows indicate time that subsequent injections of penicillin are required to maintain the indicated degree of antibacterial action).

tococcal infection and infections due to other organisms known to be very sensitive to penicillin, 15,000 units every three hours are adequate. Blood levels which can be more or less constantly maintained with a continuous intravenous or intramuscular infusion for 24 hours are as follows: with 100,000 units per day, 0.1 unit per cubic centimeter; with 200,000 units 0.2 unit per cubic centimeter; and with 400,000 units per day, a blood level of 0.4 unit per cubic centimeter can be maintained.

How long should the administration of penicillin with the maintenance of adequate blood levels be continued? It has been convincingly demonstrated[21] that in pneumococcal infections, although penicillin may destroy some of the organisms present in the parenchyma of the lung, a reactivation of the infection may be caused by pneumococci remaining viable in the bronchial exudate if treatment is discontinued too soon. Streptococcal infections may also be reactivated after apparent cure by viable organisms remaining after incomplete therapy. In these infections, penicillin should be continued 3 to 5 days after apparent cure. In serious infections due to more resistant organisms this period should be appropriately lengthened.

In conclusion, in order to give proper treatment with penicillin, first of all the etiological organism should be identified and its relative resistance to the drug determined. Therapy should be started early with an adequate dosage and maintenance of blood levels based on the resistance or sensitivity of the organism to penicillin. Administration of the drug should be continued until all danger of spread or relapse of the infection has passed. In any event, be sure to give enough, long enough.

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THE TREATMENT OF STREPTOCOCCUS VIRIDANS ENDOCARDITIS WITH PENICILLIN*

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and

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Endocarditis caused by the Streptococcus viridans has always been a highly fatal disease. Before sulfonamides were available, only rarely did any patient recover. When these drugs were employed, recovery rates up to about six per cent were observed in some series,[1,2] although the average recovery rate, if all cases were tabulated, would undoubtedly be much lower than that.

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The first attempts to use penicillin did not produce favorable results,[3-11] but Loewe and his associates[12] later reported remissions in seven patients who received large doses of penicillin for several weeks, administered along with heparin.

Since patients receiving heparin sometimes develop complications as a result of diminished coagulability of the blood[13 14] and occasionally have embolic accidents even in the presence of heparin,[13-15] we decided to treat our patients with relatively large doses of penicillin for a period of eight weeks without adjuvant heparin therapy. The present paper is a report of ten consecutive patients treated in this manner.

As shown in *Table 1,* each patient had symptoms which were typical of bacterial endocarditis varying in duration from one week to one year. All of the patients, except one, had signs of rheumatic heart disease with involvement of the mitral valve. Four had involvement of the aortic valve also. One was in the second decade of life, two in the third, five in the fourth and two in the fifth. Five of the patients entered with complications already present. Three had hemiplegias as a result of cerebral emboli, one was psychotic, and another had severe renal failure. The Streptococcus viridans was cultured from two or more specimens of blood on each patient before treatment with penicillin was started.

In the first patients we attempted to administer penicillin continuously by vein, but soon found that this method was impractical. In the patients treated subsequently, penicillin was administered for a few days by the continuous intramuscular method or by intramuscular injections at two-hour intervals. When the continuous intramuscular or intravenous method of administration was employed, the dose was 200,000 units for each twenty-four hour period. Most of the patients who were given intermittent injections received 25,000 to 30,000 units every two hours until the blood cultures had become sterile and the fever had subsided. Thereafter, they were given 20,000 units every two hours until the eight-week treatment period had been completed. Several patients received 15,000 units every two hours for the last few days of treatment in order to conserve penicillin. In the case of one patient (L.I.) treatment was discontinued at the end of thirty-two days when the supply of penicillin was temporarily exhausted. Three weeks later she developed fever, malaise and right upper quadrant pain. Although her blood cultures remained sterile, the possibility that these symptoms indicated a relapse impelled us to give her penicillin for thirty-five more days. One patient (M.B.) was treated for sixty-five days for reasons which will be discussed below. Another patient (R.S.) was given capsules of penicillin suspended in cottonseed oil orally for thirty-six hours, followed by the usual intramuscular doses thereafter.

RESULTS

As shown in *Table 1,* four patients died. One patient died after twelve, another after twenty-one, and the third after nineteen days of penicillin treatment. The fourth patient died six months after the completion of penicillin therapy.

The first patient (B.G.) was apparently a schizophrenic, being disoriented, resistant and violently active throughout the twelve days until he died. Post mortem examination revealed chronic rheumatic heart disease with cardiac hypertrophy and dilatation, mitral and aortic valve involvement with superimposed vegetations, pulmonary infarction and many peripheral emboli.

The second patient who died entered the hospital in uremia which was apparently due to a focal nephritis. She later developed thrombophlebitis of the veins of the left lower extremity followed by pulmonary infarction and congestive heart failure. Permission for an autopsy was not granted.

The third patient entered with hemiplegia resulting from a cerebral accident the previous day. He was known to have had neurosyphilis which was confirmed by examination of the spinal fluid. During his hospital stay he developed a left lower lobe pneumonia and embolization of the right brachial artery. There was no improvement in his condition except for sterilization of the blood stream. He died after nineteen days of treatment. Post mortem examination revealed a luetic aortitis and calcification of the aorta. The heart was somewhat hypertrophied and dilated with no abnormality of the valves except for a vegetation on the left posterior cusp of the aortic valve with perforation of the cusp. There was gray hepatization of the left lower lobe. An embolus completely occluding the right brachial artery was found.

The remaining patient (M.B.) lived for six months after completion of penicillin therapy. Because she continued to run a fever of 1 to 2° Fahrenheit, and appeared ill, even though the blood cultures had been negative ever since the second day of penicillin therapy, she was treated for sixty-five days instead of the usual fifty-six. During the six-month period between termination of treatment and death, the patient remained

bedridden with grade four congestive heart failure, which was only partly controlled on a vigorous cardiac regime, including digitalis, restriction of fluids and of sodium chloride, and the frequent administration of mercupurin. She had many bouts of fever, during all of which the blood cultures were sterile. It was thought that her fever and congestive heart failure were due either to repeated pulmonary infarctions superimposed on a heart already damaged by rheumatic fever and subacute bacterial endocarditis, or to active rheumatic fever. Post mortem examination revealed multiple old and recent pulmonary infarcts and old infarcts in the spleen. The heart was dilated and rheumatic mitral valvulitis was present. No evidence of active or healed endocarditis was found. It was impossible, however, to determine whether endocarditis had been engrafted upon the rheumatic valvular lesion and had later healed. Although the diagnosis of bacterial endocarditis could not be verified pathologically in this case, the clinical and bacteriological evidence was unequivocal: numerous petechiae, splinter hemorrhages, enlargement of the spleen, and five positive blood cul-

CLINICAL DATA ON PATIENTS WITH STREPTOCOCCUS VIRIDANS ENDOCARDITIS TREATED WITH PENICILLIN

Patient	Age	Sex	Color	Heart Valves Involved	Complications before Treatment	Duration of Infection (Months)	Duration of Treatment (Days)	Total Dose of Penicillin (in Million Units)	Complications during Treatment	Result	Period of Observation after Treatment
B.G.	20	M	C	Aortic Mitral	Psychosis	1	12	2.5	Pulmonary infarction Congestive heart failure Splenic infarction	Died	——
R.L.	36	M	W	Mitral	Cerebral embolism with left hemiplegia	1 week	56	8.5	None	Free of infection	12 mos.
L.I.	43	F	W	Mitral	None	5	32 (31 day interval) 35	22.0	Splenic infarction Petechiae	Free of infection	12 mos.
R.L.	32	M	W	Mitral	Cerebral embolism with right hemiplegia	12	56	16.0	None	Free of infection	9 mos.
L.P.	38	F	C	Aortic Mitral	None	4	56	12.5	Congestive heart failure	Free of infection*	9 mos.
M.B.	27	F	W	Aortic Mitral	None	3	65	28.0	Pulmonary infraction Congestive heart failure	Died of congestive heart failure	6 mos. before death. Healed endocarditis at autopsy.
J.K.	31	M	W	Mitral	None	2	56	16.5	Splenic infarction Petechiae	Free of infection	7 mos.
D.P.	13	F	W	Aortic Mitral	None	3	56	11.5	Embolus to a finger	Free of infection	4 mos.
R.S.	39	F	C	Mitral	Renal failure	4	21	10.0	Pulmonary infarction Thrompletibis of veins of lower extremities Congestive heart failure	Died	——
A.R.	42	M	W	None	Cerebral embolism with left hemiplegia	1	19	11.0	Lobar pneumonia Embolization of right brachial artery	Died	——

*Has congestive heart failure.

Table 1

tures obtained over the course of four days. Furthermore, many infarcts were found in the spleen at autopsy.

Six patients have been discharged from the hospital apparently free of their infections. The time elapsing since the end of penicillin treatment in these patients varies from four to twelve months. We have examined each of them at intervals since discharge. All are apparently well except one. She (L.P.) developed congestive heart failure during her hospital stay, and still has grade one congestive failure seven months after discharge.

We have been interested in determining whether we might be able to predict a successful outcome in a given case at the start of penicillin therapy, and, if so, upon what factors this prognosis could be based. It is apparent that neither the age of the patient nor the duration of the infection before treatment had any bearing upon the ultimate result. Others,[13] as well as we, have noted that the type and number of valves involved were not indicative of the ultimate prognosis. Complications were too few in number to be evaluated properly, but it is of interest that two patients recovered out of the three who were treated after they had had a cerebral embolus and resulting hemiplegia.

In the six patients who have recovered, improvement was quite obvious within the first three to four days of treatment. At the end of ten days or two weeks, all of these patients appeared clinically well. With the exception of M.B., whose death was apparently the result of congestive heart failure, none of the patients who died showed a drop in temperature to normal at any time.

We tested the sensitivity to penicillin of the organisms cultured from the blood of the last five patients treated. In every case, the streptococcus showed a relatively high degree of sensitivity to penicillin. Four of these patients recovered from the disease. Blood for cultures were taken at hourly intervals from five patients and placed in media containing penicillinase. In the case of four of these the peripheral blood was shown to be sterilized in three to six hours. The other patient was given penicillin orally at first. When the concentrations of penicillin obtained in the patient's blood were found to be insufficient to kill *in vitro* the streptococcus cultured from the blood, administration of penicillin by intramuscular injections of 30,000 units every two hours was begun. Blood cultures remained positive until the intramuscular method was instituted.

We have observed, as have others,[12-15 17] petechiae, splenic infarction and other signs of embolization for as long as six weeks after all signs of the active infection were gone. Four patients developed congestive heart failure during treatment. In two, this occurred following pulmonary infarction and the patients died. Previous rheumatic heart disease aggravated by the infection was undoubtedly responsible for the heart failure in the remaining two patients. Congestive heart failure has been reported as occurring in patients under treatment by other investigators.[2 14 15 17]

DISCUSSION

That penicillin will produce a remission in some cases of endocarditis caused by Streptococcus viridans is a fact which has now become firmly established. Evidence is accumulating which makes it likely that many of these patients are actually cured of the disease. Loewe[15] and Rosenblatt[16] have each reported cases in which the patients died of an unrelated cause several months after completion of treatment and showed no evidence of active infection in the valves. Meads[14] and Bloomfield[17] also have reported cases dying after completion of penicillin treatment, in whom the valves appeared healed and bacteria were found deep in the valves on smear; yet cultures were sterile. Our results are in keeping with the experience of others. Among ten consecutive patients treated by us with penicillin alone, six have been free from evidences of infection for periods varying from four to twelve months.* A patient who died of congestive heart failure six months after completion of therapy showed no definite evidence of endocarditis at autopsy.

In one major respect, the penicillin therapy received by our patients differed from that employed in most of the reported cases. We established eight weeks as the minimum length of

*_Authors' Note_ (12/11, 1945)—Since this paper was submitted for publication all the patients who were reported as being apparently recovered have been followed and have maintained their status as described in the paper. The follow-up period for this group of patients is now seven to fifteen months.

penicillin therapy. Three patients died before this period was up. The fourth patient died six months after treatment was completed of congestive heart failure and free of evidence of remaining infection. Treatment in the case of one other patient was discontinued after thirty-two days because of a shortage of penicillin. Three weeks later she appeared to have a relapse, and was treated for another thirty-five days. Twelve months later she is well, leading an active life. The five remaining patients, who were treated for at least eight weeks, are apparently free from the infection, and up to the present time none of them has experienced a relapse. Nearly all investigators, reporting their experiences with penicillin in the treatment of subacute bacterial endocarditis, have reported at least a few relapses.[2 12-15] It is interesting that these relapses have always occurred in patients treated for a month or less, and have responded to a second course of the same drug. In spite of this fact, there are obvious advantages inherent in a procedure which will apparently terminate the infection during the first course of treatment. First, any regime which allows relapses to occur automatically increases the chance of complications occurring, any one of which can be fatal. For instance, deaths from cerebral emboli or heart disease have been reported during a relapse of the disease.

Second, when a relapse takes place, and another course of penicillin is needed, the total amount of the drug consumed and the period of hospitalization required is greater than if one long course of penicillin had been used in the first place.

Third, whenever relapses occur, the possibility of the development of a resistant strain of the organism is greatly enhanced. The principles already established for antibiotic therapy in general would make it mandatory that we eradicate the infection completely with a single course of treatment, whenever this is possible. Whether a slightly shorter period than eight weeks would be just as satisfactory is a problem which must be settled by further trials. Loewe[15] recommends that all patients be treated for at least five weeks. Bloomfield and his co-workers[17] advocate six to eight weeks of treatment, Mokotoff and associates[18] advocate between three to nine weeks of treatment, preferably the latter.

Our experience also shows that all patients should be treated with penicillin regardless of the severity of their condition, the presence of complications or the duration of the disease prior to the introduction of penicillin therapy. These factors are not indicative of the ultimate outcome. Others have made similar observations. Loewe[15] has stated that he started treatment on several patients whom he believed would not survive very long, and yet some of these patients recovered.

SUMMARY AND CONCLUSIONS

(1) Six out of ten consecutive patients treated with penicillin have remained free of all evidences of infection for from four to twelve months. An additional patient died of congestive heart failure six months after the termination of penicillin and showed no signs of active infection at autopsy.

(2) Age, sex, color, valvular involvement, and duration of infection were not factors in the ultimate prognosis of these patients. The presence of a serious complication before treatment did not necessarily preclude recovery.

(3) It is concluded that patients with endocarditis should be treated with penicillin for a period of eight weeks. By this method, relapses are apparently avoided.

We wish to thank Dr. Roger Choisser and the members of his staff for the privilege of reporting the pathological findings on the autopsied cases; the staff of the Georgetown Medical Division for permission to report the case of A.R., and Miss C. Barbara O'Neil and Mrs. Rose Breen for technical assistance.

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DOES THE FRACTIONAL DAILY URINE EXAMINATION ON A DIABETIC PATIENT FURNISH US THE IDEAL MEANS OF CONTROL?*

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Fractional urine examinations (before breakfast, lunch, dinner and at bed-time) is an accepted routine in many hospitals. Many physicians have their patients follow this routine at home, following their discharge from the hospital, day in and day out, over long periods of time. It is supposed to help the patient to keep a close control of his diabetic state. On this basis of the test, the patient can take a unit or more "extra" of insulin if glycosuria appears any time during the day and thus make an immediate adjustment of the "spill."

Such an idea sounds quite logical on the surface. What could be simpler than the above procedure? The question is: does it represent facts and does it really accomplish what it is intended to accomplish?

To understand glycosuria one must understand the varying levels of glycemia during the day. In any person glycosuria will appear when the blood sugar level has risen above his particular renal threshold. This is apt to happen following a meal when we get a rise of blood sugar which rise varies in all individuals, more in some, less in others; we speak of this as "post-prandial hyperglycemia" which is a normal physiological process. In diabetes the same thing happens, but it is accentuated. We get higher rises of the blood sugar after meals and consequently are apt to get more frequent "spilling" of sugar from the blood stream into the urine. In ordinary routine we try to adjust the insulin dosage in such a way that it may avoid the spilling of sugar. However, it is not always possible to do so if we have regard for the patient and try not to make the treatment worse than the disease. There are cases that we can control and in which we can eliminate all glycosuria; and in others, no matter what the routine, how many injections of insulin a day, we still get some glycosuria. In the latter we have to compromise in our routine.

The question of renal threshold for sugar is by no means a cut and dry proposition. It is not, as stated in many textbooks on diabetes, a fixed point at say 180 mg. per cent of blood sugar concentration in all individuals. It varies tremendously, in diabetics and non-diabetics; it can be as low as 54 or as high as 500 plus mg. per cent, but is usually somewhere between 140 and 200 mg. per cent. Unless we know the approximate threshold of each patient, we can not interpret the findings of glycosuria. Let us take for example a patient with a threshold of 70 mg. per cent. Such an individual will show glycosuria most of the time, if not all the time. And he may even be a diabetic. Or, let us take an individual with a renal threshold of say 380 mg. per cent. Such a person will not show any glycosuria when he is running a high blood sugar; he may be having blood sugar during the day varying from 250 to 360 mg. per cent and be sugar free. Were he to depend on urine examinations 4 times a day as indices of control, he would, if urines were sugar free, miss the mark badly. Such cases are not exceptions. It is known that diabetics of long standing will develop a high renal threshold for sugar which is perhaps nature's attempt to prevent excretion of too much sugar. We know that hyperglycemia if allowed to continue, will in time destroy the

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insulinogenic function of the pancreas and produce a more severe diabetic state. Thus, if one tries to follow the status of a diabetic by fractional urine analyses alone, one is between the Scylla and Charibdis or in plain English, in hot water.

It is often said that some patients cannot have systematic blood sugar studies at home because they live too far from laboratories or, they cannot be transported. Actually this is not true. Some 20 years ago I tried and did solve this problem, thinking of the physician in the more remote regions who wants to do good work but has not the facilities in his office. I devised a blood sugar tube on the model of the Keidel vacuum tube, which is all ready and sterile, packed in a wooden case. Chemicals in this tube prevent the decomposition of sugar for a week or more. Such a sample of blood can be mailed to any laboratory in the U. S. The directions are printed on a slip inside each wooden case. It has had considerable vogue in some states and is used by some of the state board of health laboratories and insurance companies. On the sample of blood, besides sugar, determination of urea, non-protein nitrogen, uric acid, and so on, can be done and one checks on the slip what examination is wanted. Now, with air mail delivery, the whole problem of speed is simplified so that no matter how far a doctor may be from a medical center, he can get prompt information in a short time.

Let us come back to the problem of glycosuria in the control of a diabetic on diet and on insulin. As stated above, such a patient may show glycosuria in one or two specimens of urine during the day. He is instructed to take 1 to 7 units "extra" of insulin at that time. He does, and the next specimen may or may not be sugar free. Or, he may take no "extra" insulin and the urine becomes sugar free and remains so for days. These are facts that anyone who takes the trouble to observe such patients can find out for himself. Does an occasional glycosuria have much significance? Does it have to be counteracted with additional insulin? The answer is: How much sugar? Here we come to a point which has been one of the great fallacies going on for decades in American medicine. The patient or the doctor will answer: one per cent, half a per cent, or two per cent. Does this mean anything? Two per cent of what? One per cent of sugar in 50 c. c. of urine is 0.5 gram of sugar; one per cent of sugar is 500 c. c. is 5 grams; one per cent of sugar in 1,000 c. c. of urine is 10 grams. The third urine contains exactly 20 times as much sugar as the first urine does and yet the percentage in both is the same. Unless we know the amount of urine voided, we have no way of knowing what amount of sugar the percentage represents. The important thing is not the per cent, but how many grams the patient is excreting in 24 hours. This is the best test of adequacy of the treatment schedule provided we cannot have the proper blood sugar studies.

If a diabetic carries a reasonable blood sugar level throughout the day, and excretes 10 gm. or less per 24 hours, he can be considered as reasonably well controlled. A diabetic who excretes no sugar in the urine and who carries hyperglycemia through most of the 24 hours, is not well controlled. In him we require the blood sugar levels throughout the day (three times a day) for proper control. Once we adjust the blood sugar level to a near physiological level, we need pay very little attention to the urine as sugar is automatically eliminated unless the patient has a very low renal threshold. Glycosuria has very little significance in a case with a low renal threshold.

What stimulated me to write this paper is a letter received from one of my old patients, a woman now past 60, who first came under my care in 1923. At that time her physical condition was very bad indeed; she had yellow xanthomas on the eyelids, acetone breath, marked emaciation and was very weak. This was at the time when insulin was first discovered. In a few weeks, with the aid of diet and insulin, her status changed quickly and she improved rapidly, gained strength and soon was able to do her cooking, and later her housework. The transformation was remarkable in that early insulin era. For 22 years she has lived the normal life of a housewife.

On April 28, 1945, I received a letter from her in which she did not sound like herself. She was upset and worried, and in part said: ". . . 22 years is a long time and I should be reconciled to go, but I've been so well and enjoyed living and I hate to be swept down without any apparent reason. The saying 'a diabetic could live a long time if he took care of himself' had gotten me believing it."

What brought about such a state of despondency in this sensible and rational woman who has been a diabetic over 22 years? The answer is "urine examina-

tions." Since my entrance into military service over four years ago, the patient has been under the care of another physician. He instituted daily urine examinations (before breakfast, lunch, dinner and at bed time) and had the patient keep a chart of these all those months. Directions given were: "Take 'extra' insulin if single specimen indicates sugar; if yellow, 3 units; if orange, 5 units; if red, 7 units, but take none after evening meal." During April, 1945, she was taking 40 units of protamine zinc insulin and 10 units insulin, both before breakfast. The data for the month of April which she sent me appears in *Table 1*. It was these data which caused her to be so upset.

There are some interesting points in this table to consider. Note that on April 2, she had a severe reaction in the morning, thus no check before breakfast and lunch. At supper and bed time she showed 3/4 and 2 per cent of sugar respectively. Why? Because to meet the reaction, she took extra carbohydrate, the insulin dosage was not enough to take care of the added carbohydrate and glycosuria appeared in the evening. I venture to say that the total glycosuria did not amount to more than 2 or 3 grams which is of no significance. April 3, she showed 0.5 per cent in the morning, none at noon and evening, and 1 per cent at bed time. She took no extra insulin. April 4, the morning and noon specimen was sugar free, the noon showed 1 per cent sugar, she took 3 units of insulin and the evening specimen showed 0.5 per cent sugar. Next morning she took 40 units protamine zinc insulin and 10 units insulin (her routine dose) and all specimens were sugar free. Next day, the sixth, the first two specimens were sugar free, the evening one showed 0.5 per cent, she took 2 units insulin and the evening specimen was sugar free. Next day she showed 0.25 per cent sugar before supper, took 2 units insulin, the same as the day before, and the evening specimen which was sugar free the day before, showed 1 per cent sugar.

All the above variations could well be due to the amount of urine excreted at the time and the actual amount of sugar excreted has little or no significance as it is minimal. It just disturbs the patient.

On April 14 she showed 0.25 per cent sugar at bed time. Next morning she took the same dosage of insulin, 40 and 10, and in the evening had 0.25 per cent of sugar in the urine. On April 15 she took the same dosage, 40 and 10, showing 2 per cent before supper and at bed time. No

DIET: Carboh. 160, Protein 74, Fat 74 grams, Cals. 1,602.
INSULIN: PZI 40 units. I. 10 units, before breakfast.

Urine Examinations

Date	PZI-I	Before breakfast	Before lunch	Before dinner	Before bedtime	Remarks
April						
1	40-8	blue	blue	blue	blue	
2	40-8	Severe reaction, no ck.		0.75 per cent	2 per cent	
3	40-8	0.5 per cent	blue	blue	1 per cent	
4	40-8	blue	blue	1 per cent (3 units)	0.5 per cent	
5	40-10	blue	blue	blue		
6	40-10	blue	blue	0.50 per cent (2 units)	blue	
7	40-10	blue	blue	0.25 per cent (2 units)	1 per cent	note increase
8	40-10	blue	blue	blue	blue	
9	40-10	blue	blue	blue	blue	
10	40-10	blue	blue	blue	blue	
11	40-10	blue	blue	blue	blue	
12	40-10	blue	blue	blue	blue	
13	40-10	blue	blue	blue	blue	
14	40-10	blue	blue	blue	0.25 per cent	
15	40-10	blue	blue	2 per cent	2 per cent	
16	40-10	blue	blue	blue	blue	no increase ins.
17	40-10	blue	blue	blue	blue	
18	40-10	blue	blue	blue	blue	
19	40-10	blue	blue	blue	blue	
20	40-10	blue	blue	0.5 per cent	2 per cent	
21	40-10	blue	blue	1 per cent	2 per cent	
22	40-10	0.5 per cent	blue	1 per cent (2 units)	2 per cent	
23	40-6	blue (6 units)	0.25 per cent	2 per cent		
24	40-10	blue	0.25 per cent	2 per cent		
25	42-12	2 per cent		1 per cent	0.75 per cent	
26	44-14	2 per cent	blue	blue	2 per cent	
27	44-14	0.5 per cent	2 per cent (7 units)	1 per cent	blue	
28	40-10	blue (3 units)	1 per cent			

Table 1

extra insulin was taken and the next 4 days all specimens were sugar free. Thus, extra insulin or no extra insulin, the thing straightens out of its own accord.

From April 20 on she began to show sugar in the last two specimens and gradually it appeared in 3 specimens and she became excited, began to increase her morning dosage to 42 and 12, 44 and 14 and the excretion continued. It looked bad to her but in reality all that was needed was to put her mind at ease, to explain to her that it was not so significant as she thought, to continue on 44 and 14 until she began to have reactions, then to cut it to 42 and 12, 40 and 10 and stick to that dosage which, as shown by previous blood sugar checks, controls her condition reasonably well. Her blood sugar checks are shown in *Table 2*.

It is evident from the above that her diabetic state is under reasonable control on an average dosage of 42 and 8 units (PZI-I) a day. That an occasional glycosuria shows up during the day is of no significance provided it does not keep increasing, which would indicate that more insulin is needed. A proper blood sugar check up tells the patient's condition, whether or not he is controlled, so that proper changes in the dosage can be instituted. If it is done on the basis of urine analyses, one is more or less at sea as the actual amount of sugar may be insignificant but because the urine is small in volume, this insignificant amount of sugar will give a strong reaction. If that same amount of sugar appears in a larger volume of urine, the reaction will be much less. Thus, again to emphasize the point: it is not the per cent of sugar in the urine that is of significance, but the total amount of sugar excreted in 24 hours. I always prefer to do a 24-hour quantitative sugar determination in addition to the three blood sugars in order to determine just how much sugar the patient is excreting. If more than 10 grams, adjustment of insulin dosage is indicated. The real test, however, is not glycosuria, but the glycemic level throughout the day.* That, and only that tells the significant story. Patients are frequently upset when they find glycosuria. It is not good psychology. I feel it applies only to one type of a patient, namely, the careless individual who, upon finding of glycosuria is apt to get a scare and be brought back to a straight and narrow path. But to punish thus the good diabetic patient and help to upset his condition seems to me hardly justifiable.

	8	12	5	PZI-I
1942				
Nov. 18	115	160	60	42-8
1943				
Mar. 9	135	170	70	42-8
Aug. 3	66	138	99	48-8
Dec. 18	50	56	48	42-8
1944				
Mar. 13	125	173	50	41-8
June 13	50	170	105	41-8
Oct. 17	84	167	150	41-8

Table 2

SUMMARY

Repeated urine examinations on a diabetic patient, estimating only the percentage of sugar, are apt to be misleading and should not be depended upon to give a good index of his diabetic status.

The finding of an occasional glycosuria is apt to represent the excretion of only a few grams of sugar in the urine per 24 hours and in that respect it has but little significance. A better procedure is to estimate the actual excretion of sugar per 24 hours in grams. If it exceeds 10 grams per 24 hours, adjustment in the insulin dosage is indicated.

A still better procedure for evaluation of the control of the diabetic state is the three times a day blood sugar determination. This plan eliminates the uncertain problem of renal threshold for sugar, which varies in patients. It indicates whether any given routine of treatment is adequate or inadequate and thus enables us to adjust the insulin routine properly.

*(The proper glycemic level consists of normal or near normal blood sugar before each meal. The postprandial blood sugar rise is physiological; it is more pronounced in the diabetic; if such a rise returns to normal in three hours, that is, before the next meal, then certainly we have accomplished all that can be accomplished by the dietetic and insulin routine. If the morning blood sugar is normal, the noon somewhat elevated, and the evening one normal, then either a smaller breakfast or else giving the insulin earlier, or else increasing the insulin by 2 to 4 units and diminishing the protamine zinc insulin by that amount (if both are given in the morning) will bring about the lowering of the noon blood sugar. If the morning and noon blood sugar are normal and the evening one somewhat elevated, then a smaller meal at noon will correct it. The fasting blood sugar of any patient taking protamine zinc insulin or PZI plus I, should be 100 mg. per cent or less. If it is above normal, that alone indicates that the dosage of protamine zinc insulin is inadequate and needs to be increased. Thus the morning blood sugar is a direct index of the overall protamine zinc insulin dosage.)

OBSERVATIONS ON THE TREATMENT OF DIABETES MELLITUS COMPLICATED BY PULMONARY TUBERCULOSIS*

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It has been known for centuries that individuals suffering from diabetes mellitus are especially prone to the development of pulmonary tuberculosis. It is evident that diabetics have no more contacts with pulmonary tuberculosis than non-diabetics; therefore, it must follow that diabetics have a more pronounced diathesis than non-diabetics. It is held that either the lowered resistance of the lack of control, or a combination of the two, is responsible for this diathetic manifestation. It would seem logical that with the advent of improved therapy, the incidence of this complication should decrease. Inquiry into the literature would seem to confirm this reasoning. Windle[1] in 1883 reporting on an autopsy series of 333 diabetics found that one-half showed pulmonary tuberculosis. Twenty-nine years later, Montgomery[2] reported an incidence of 24 per cent and Fitz[3] in 1924 stated that about one-fifth of the patients in his series revealed evidences of pulmonary tuberculosis.

In a study of 101 autopsies on proved diabetics, from 1928-1941 at the Charity Hospital at New Orleans,[4] only seven cases of pulmonary tuberculosis were found. These figures are essentially the same as those obtained by Himsworth,[5] who found 15 tuberculous lesions in 230 cases, two by clinical methods and the rest radiologically. From 1898 to 1914, 4.7 per cent of the diabetic deaths were primarily due to pulmonary tuberculosis. From 1914-1922 tuberculosis accounted for 5.7 per cent and from 1922-1935 for 6.7 per cent of the primary deaths. Therefore, it is evident that because of better control and prolonged life expectancy for diabetics, more of these patients are dying from the complicating tuberculosis than from the diabetes itself.

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MATERIAL

For this study we chose those diabetics who had had roentgenograms of the chest, and in addition could supply known data as to duration of diabetes, presence or absence of diabetic coma, and known therapy. Of the total number of patients, 53 satisfied these criteria, being members of the colored race and 24 of the white. The sex ratio was 45 females to 8 males. The ages of these patients varied from 7 years to 87 years with an average age of 44 years. All of these patients had attended the diabetic clinic of Charity Hospital.

DISCUSSION

The ratio of female to male patients in this series was found to be 5.6 to one (*Fig. 1*). This is somewhat at variance with the nation-wide ratio in that in our group, complicating tuberculosis is even more prominent in the female. In Joslin's private cases, there was an increase in female patients from 41 per cent in his first 100 cases to 64 per cent in the eighteenth thousand. This increase is probably due both to better medical investigation of the female as compared with a few decades ago, and to the increase in the longevity of the female. The Nation Health Survey, which comprised a study

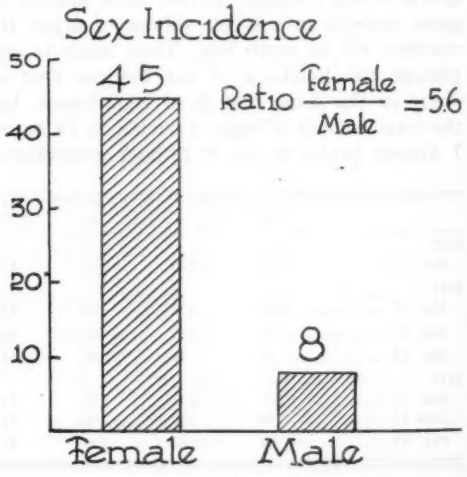

Fig. 1

of 2,502,391 cases, produced a female/male ratio of 2.3 to one.

In our total of 53 cases, 29 were colored and 24 were white, giving a white/colored ratio of 0.7 (*Fig. 2*). Negroes at one time were thought to be racially resistant to diabetes mellitus but recent studies indicated that many are affected with this disease.[6] Leopold's[6] white/colored ratio in 1931 was 1:2 which would agree even more closely with our own results if one considers that approximately 62 per cent of the total admissions to Charity Hospital are Negroes. However, it is generally conceded that Negroes have a lower morbidity although a higher mortality to diabetes mellitus than do members of the white race.[4]

Our results as to age incidence agree rather closely with varied reports, the predominance being in the fourth, fifth, and sixth decades of life in both races.

Of particular interest in this series was the incidence of roentgenological evidence of pulmonary tuberculosis. Of the 53 cases four had definite x-ray evidence of pulmonary tuberculosis, four had strongly suggestive x-rays and three had slightly suggestive x-rays. This gave a percentage of 7.5 as compared with Root and Bloor's[7] 5.6, Himsworth's 6.5,[5] and Root's[8] later series of 7.6. Although, the morbidity seems to vary considerably in these series, a study of mortality records shows, as stated previously, that tuberculosis as the cause of death is steadily increasing in diabetics and they are not dying of the diabetes per se. This can be easily explained by pointing out the specificity of insulin in the treatment of diabetes.

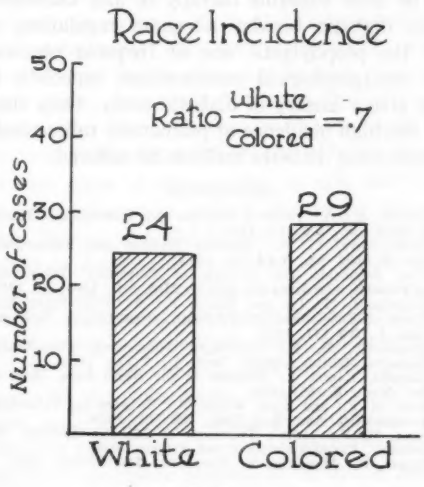

Fig. 2

Tuberculosis in diabetics has certain peculiarities which are hard to explain. Cavities are present in nearly 50 per cent of the cases. Rapidly developing caseation has been considered characteristic of diabetic patients with tuberculosis and roentgenologists describe a "butter fly" type of lesion, which consists of a soft exudative process spreading peripherally from the hilus. The apex and base are frequently uninvolved. Clinically, however, this type of tuberculosis shows no distinguishing characteristics. A "non-sensitized" form of tuberculosis resembling the primary tuberculosis of children occurs frequently in Negroes. Mayer[9] says that tuberculosis of the larynx and upper respiratory tract shows quick progress and caseation in diabetics. Pleural adhesions are much more frequent in diabetics than in "non-diabetics" but tuberculosis involving serous structures other than the pleura is very rare. It is widely known that coma and tuberculosis go hand in hand. In one series of cases involving asthenic diabetics, 80 per cent who had had coma developed tuberculosis; this compares with our 75 per cent very closely (*Fig. 3*).

The prognosis of patients with tuberculosis and diabetes is about as good as the tuberculosis itself. If discovered at comparable stages, a "mixed" case should live as long as an uncomplicated case of tuberculosis. Only by the discovery of tuberculosis in an incipient stage can the prognosis be greatly improved.

TREATMENT

We feel that the diet prescribed should be adequate enough to allow the patient to gain sufficient weight so that he reaches an optimal figure. Between 35 to 40 calories per kilogram is usually enough and we prefer that it be broken down to at least 250 grams of carbohydrate, 1 to 1½ grams of protein per kilo of body weight and enough fat to make up the desired number of calories.

Any attempt to submit tuberculous diabetics to a low calorie diet will result in nothing better than a decrease or even loss of their glycosuria

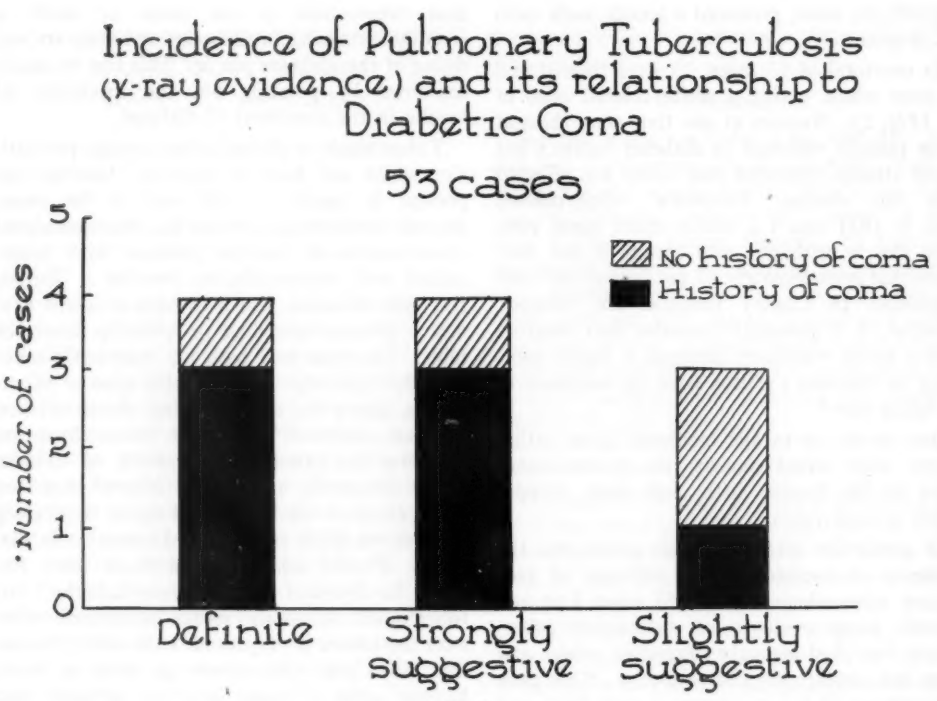

Fig. 3

at best, and a progression of their tuberculosis is highly probable. Fishberg[10] has emphasized this statement. A moderate hyperglycemia is harmless and excessive measures to lower it should not be employed, especially in older patients.[11] When the tuberculous patient becomes toxic, a fluid or semi-fluid diet is advised. This diet should equal the more solid diet in carbohydrate, protein and caloric content. Later as the condition improves, a more solid diet is substituted. The same general principles used in the treatment of tuberculosis are valuable in these patients, namely: fresh air, freedom from psychic trauma and rest. Surgical procedures should be carried out when indicated.[12]

Diabetics with tuberculosis almost always require insulin. It is essential that the diabetics with tuberculosis be well controlled and to insure this we give the patient protamine zinc insulin and unmodified insulin on the sliding scale.

We consider a patient regulated when he spills 5 per cent or less of the total available carbohydrate in his diet in 24 hours and is always free of acetoneuria.

The most valuable therapy in any uncomplicated diabetic besides adequate regulation, is still the prophylactic one of frequent physical and roentgenological examinations, especially if they give a history of diabetic coma. Only then will the high incidence of pulmonary tuberculosis complicating diabetes mellitus be reduced.

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and a subnormal temperature may be recorded. This condition has been attributed to a low triolein content of the fatty tissues causing a higher melting point of the fatty acids. Ormsby states that needle-like crystals may be seen histologically, but other authors state that microscopic examination reveals no abnormality in the tissues. Particularly important in regard to this condition is the grave prognosis. The infants succumb within a few days after the onset of the disease.

The other condition which has been frequently called sclerema neonatorum is now termed necrosis adiposa neonatorum, subcutaneous fat necrosis of the newborn or pseudosclerema. The patient studied by Luzzatti and Hansen appears to be an example of this type. There are usually deep seated indurated areas of variable size in the subcutaneous tissues, often in the cheeks and shoulders but on occasion extending to the back and buttocks. The areas cannot be pinched and do not pit on pressure. The lesions tend to disappear without specific therapy within a few weeks to several months. Although the prognosis is good it is necessary that proper nutrition be maintained. The histologic picture is typical; there is necrosis of subcutaneous fat cells with an infiltration of epithelial cells, and often multinucleated giant cells, especially at the periphery of the fat lobules. Frequently sheaths of needle-like crystals are demonstrable. Chemically it has been demonstrated that excess calcium and phosphorus are present following this foreign-body-like reaction and later calcification may be seen on x-ray examination. As previously stated, Luzzatti and Hansen also found changes in the character of the fatty acids deposited in the affected areas.

Other types of abnormality in skin and subcutaneous tissues have been studied by the author. Hansen and McQuarrie[4] have reported the results of lipid analysis of various tissues in a child who presented a bizarre clinical picture because of generalized absence of subcutaneous fat. There was hepatomegalia and splenomegalia present but the clinical condition was complicated by the subsequent development of diabetes mellitus and at death the child was also found to have cirrhosis of the liver. Because of the almost complete absence of fat in the tissues as determined chemically and histologically the authors termed the condition "lipohistiodiaresis." The skin and subcutaneous tissue taken together was found to contain 0.34 grams of fat per 100 grams wet weight in contrast to 10.0 grams in a control subject. It was impossible to find any subcutaneous fatty tissue to analyze in the child with the lipohistiodiaresis but the perirenal tissue contained 0.45 grams per cent of fat which is about one-hundredth that found in control subjects. The absence of fat in the tissues was more pronounced by far than that observed in a child with lipodystrophy progressiva. In the latter instance the subcutaneous tissue was found to contain 4.8 grams per cent of fat or about one-tenth that expected. A control subject was found to have 40.1 grams per cent of total fatty acids in a comparable area. We have seen no references in regard to tissue lipid analyses for any other child with lipohistiodiaresis but the fat content of the tissues of a child with severe cachexia secondary to a neoplasm was not nearly as markedly reduced as in our child having generalized lipodystrophy.

Information concerning the regulation of the amount and character of the fat in skin and subcutaneous tissues is incomplete; however, it is a well known clinical observation that in uncontrolled diabetes mellitus xanthomatous lesions frequently develop. It has often been stated that this phenomenon occurs because of the marked lipemia which results from a derangement in fat and carbohydrate metabolism. Lipemia occurs characteristically also in lipoid nephrosis in children yet xanthomatous lesions do not appear to develop. Serum and tissue lipid studies were made in a poorly regulated diabetic child with extensive xanthomatous lesions. The serum lipid findings in this child (R.R.) are presented in *Table 2* together with those from a child with lipoid nephrosis and an average control subject.

The lipemia in patient R.R. (*Table 2*) was quite marked being 7 to 8 times the expected average value. The greatest portion of the lipemia can be accounted for by a rise in triglyceride fatty acids (calculated value) which is probably 10 times greater than the control value. The cholesterol ester fatty acids were increased 5 to 6 times whereas the phospholipid fatty acids (acetone insoluble) were but 3 to 4 times greater than the normal value. The iodine

numbers in all fractions were relatively low. These findings indicate that in the lipemia of diabetes mellitus there is an accumulation of saturated fatty acids in the serum principally in the triglyceride fraction although other fractions also show some increase in the amount of these acids. This phenomenon of lipemia may well be due to the presence in the tissues of the fatty acids which are not available for energy use by the body. Although it is conjectured that ketone bodies accumulate in the blood and tissues of uncontrolled diabetics because of the excess burning of fat resulting from the body's inability to oxidize carbohydrate, this does not necessarily explain the production of the lipemia.

As may be seen from *Table 3* the amount of total fatty acids in the xanthomatous tissue from patient R.R. is not increased. The distribution of these fatty acids, however, is greatly altered from that in normal tissue. The triglyceride fatty acids (acetone soluble fatty acids minus cholesterol ester fatty acids) are decreased both relatively and absolutely. The phospholipids are definitely increased, and the cholesterol ester fatty acids are greatly increased. By far the most impressive finding is the great accumulation of cholesterol in the xanthomatous lesions. The high iodine number of the fatty acids indicates that there was an accumulation of unsaturated fatty acids in the xanthomatous tissue in contrast to the accumulation of saturated fatty acids in the blood. The interrelationship between the tissue and blood lipids in this abnormal metabolic state is not clear. Just what these relationships may be is difficult to conjecture and even more difficult in the light of studies by Hansen, McQuarrie, and Ziegler[5] on the patient with lipohistiodiaresis in whom it was found that even though appreciable quantities of triglyceride fatty acids were present in the serum, they were practically absent from the body tissues.

It has often been stated that the lipemia which characteristically occurs in children with the nephrotic syndrome may be the result of a compensatory phenomenon related osmotically to the hypoproteinemia which occurs in this condition. Certainly the converse does not hold true, namely, that prolonged lipemia depresses the plasma protein level. The question also may be asked, "Does faulty fat absorption limit the development of lipemia in a hypoproteinemic state?" Evidence that there is no simple relationship between hypoproteinemia and lipemia

Serum lipid values in child (R.R.) with diabetes mellitus having xanthomatous skin lesions; child (J.J.) with nephrosis, and control subject, C.

Case	Total F.A. Mg. Per Cent	IN	Acet. sol. F.A. Mg. Per Cent	IN	Acet. Insol. F.A. Mg. Per Cent	IN	Cholesterol Total Mg. Per Cent	Esters
R.R. Diabetes mellitus	2756	80	2229	73	459	100	976	599
J.J. Nephrosis	1383	80	876	77	453	87	----	----
C Control	387	106	253	99	122	118	----	----

Table 2

Lipid values on basis of wet weight of tissues from xanthomatous skin lesion in child (R.R.) with uncontrolled diabetes mellitus compared with those of skin of control subjects (G.C. and M.H.)

Case	Total F.A. Grams Per Cent	IN	Acet. Sol. F.A. Grams Per Cent	IN	Acet. Insol. F.A. Grams Per Cent	IN	Cholesterol Total Grams Per Cent	Esters Grams Per Cent
R.R. Xanthoma	4.88	94	4.28	81	0.86	---	1.84	0.65
G.C. Control	10.00	64	10.00	64	0.16	97	0.10	0.03
M.H. Control	4.80	65	----	---	----	---	0.16	0.10

Table 3

was gained from our studies in a child having cystic fibrous of the pancreas in whom there was marked edema and low blood proteins (3.26 grams total protein per 100 c. c. serum) but no albuminuria. The results of the serum lipid analysis in this child are given in *Table 4*.

It is apparent from these findings that a lipemia does not necessarily develop when hypoproteinemia exists even for fairly prolonged periods and certainly no hypercholesterolemia occurs as both the total and esterified cholesterol were quite low in this patient. It may be noted that the iodine number of the fatty acids is quite low in each of the various fractions. Luzzatti and Hansen[6] observed this to be quite a characteristic finding in patients suffering from the celiac syndrome. This phase of the lipid problem has been discussed recently in a similar review by the author.[7]

Attempts have been made to investigate various phases of disturbances in lipid metabolism such as those concerned with fat absorption (effect of bile and duodenal enzymes), fat transport (chylous ascites), fat mobilization (starvation), serum lipids in various abnormal metabolic and hormonal states, and in certain lipidoses (Hand-Schüller-Christian disease); however, detailed discussion of these entails considerations beyond the province of this presentation. Inasmuch as we have had an opportunity to carry on investigations* pertaining to the unsaturated fatty acids in nutrition most of which have been carried on in cooperation with Hilda F. Wiese, Ph.D., a few notes on this phase of the subject may not be amiss.

The discovery of Burr and Burr[8] in 1929 that certain unsaturated fatty acids were essential for the normal nutrition of rats has resulted in the necessity of altering our previous concepts of the significance of fat in the diet. Previous to this, fat in the diet was thought to be of importance only as a source of concentrated energy and as a vitamin carrier, although some attention had been given to its satiety value. The typical features of the fat deficiency syndrome in the rat are retardation in growth, development of scaliness of the tail and hair, kidney lesions with hematuria and early death. The best known of the essential fatty acids found to be effective both in the treatment and prevention of this unsaturated fatty acid deficiency syndrome are linoleic acid and arachidonic acid.

Hansen and Wiese[9] found the development of abnormal dryness of skin and hair and flaky desquamation to be the most striking finding in young dogs reared on diets extremely low in fat. Blood lipid studies by these authors suggested that dogs too are unable to synthesize the essential fatty acids.

Information concerning the significance and essentiality of certain unsaturated fatty acids in human nutrition and metabolism is indeed meager. The lack of relatively easy and accurate methods for the determination of linoleic and arachidonic acid undoubtedly contributes to the lag in our knowledge concerning these particular fatty acids. Most of the evidence which indicates that they are essential or at least may be of significance in human nutrition is indirect.

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Serum lipid values in 20-month-old girl (M.J.) with marked generalized edema of nutritional type compared with those of normal subjects and patients with celiac syndrome.

Case*	Total F.A. Mg. Per Cent	IN	Acet. Sol. F.A. Mg. Per Cent	IN	Acet. Insol. F.A. Mg. Per Cent	IN	Cholesterol Total Mg. Per Cent	Esters Mg. Per Cent
M.J. Nutritional edema	253	82	163	81	75	90	98	50
Average 5 control subjects*	357	106	240	98	100	114	—	—
Average 8 patients with celiac syndrome*	314	78	209	77	95	77	145	96

* From Luzzatti and Hansen.[6]

Table 4

Studies including blood lipid determinations of patients maintained on diets very low in fat, whether experimentally or physiologically because of faulty fat absorption, indicate that the human organism does not synthesize highly unsaturated fatty acids. The blood lipid pattern produced under these conditions in human subjects is similar to that found by the author to occur in both rats and dogs. There is some indication that both the lack of fat in the diet and the addition of fats and oils rich in the unsaturated fatty acids may be concerned with the maintenance of the normal integrity of the skin in human beings. One phase of this is suggested by studies of patients with eczema.

The observation has been made that the degree of unsaturation of the serum liquid of patients with eczema tends to be comparatively low. In about four-fifths of eczematous infants under 2 years of age and a little over one-half of adult patients with eczema, the serum fatty acid iodine numbers are below the normal range. Two additional features tend to lend support to the possible significance of the unsaturated fatty acids in relation to this condition of the skin. The first of these is the clinical observation that a number of patients with chronic eczema are benefited when dietary fat such as fresh lard and certain vegetable oils (corn and linseed) is added to the diet. (These fats are known to be effective in curing the fat deficiency syndrome in experimental animals). Secondly, coincidental with improvement in the condition of the skin, the degree of unsaturation of the fatty acids of the serum in most instances has been found to return to within the normal range. Some workers have reported only suggestive and even negative results regarding the therapeutic aspects of the problem. However, the combined experience of Finnerud, Kesler, and Wiese,[10] and that of the author and his co-workers reveal that over one-half of the patients with intractable eczema are greatly benefited by the dietary inclusion of fats rich in the unsaturated fatty acids. Another one-fourth or more appear to be benefited to some degree. In some patients, of course, no difference whatsoever in the condition of the skin seems to result from this regimen; in others the good results are quite striking. In most of the recent studies, fresh lard has been the source of fat used. Most patients appear to have little difficulty in taking lard in teaspoon or tablespoon quantities, although some prefer to take it with salads as dressings, on cereals, or as a spread on crackers, toast or in sandwiches. It is felt that a therapeutic trial should comprise a period of about 2 months or so using one to two ounces per day. The effect when it is observed is not usually immediate or dramatic. This is not surprising in view of the findings of Wiese and the author,[11] that dogs suffering with marked skin changes due to a lack of fat in the diet do not become entirely normal in appearance nor do the serum lipid values return to normal until the fresh lard supplement has been continued for periods of from 4 to 6 weeks. At the present time it appears that this regimen should supplement but not substitute for a careful allergic work-up and the use of local therapeutic measures. However, it seems that our understanding of one phase of unsaturated fatty acid metabolism in relation to human nutrition will be augmented by continuation of studies along these lines.

In closing, we may state that our knowledge of essential fatty acids in metabolism and nutrition will not be complete until considerable more studies have been made by both the fundamental scientists and clinicians. The same may be said in regard to the whole field of disturbances in lipid metabolism, namely, only the cooperative efforts of the biochemist, physiologist, nutritionist, chemist, pathologist, and physician, will sufficiently clarify and simplify lipid metabolism so that it will not mystify the practitioner of medicine.

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NEWER METHODS OF HEMOSTASIS IN NEUROSURGERY*

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The common methods of blood stilling by sponge, clamp, and ligature are largely inapplicable to intracranial surgery, particularly in the presence of bleeding from the nervous tissues themselves, and any device which serves as an aid to haemostasis in these difficult operations will bring a larger number of them to a safe termination.

—*Harvey Cushing, 1911*[1]

The quotation above, from the summary of Cushing's paper of 1911, in which his hemostatic silver clip was first described, is equally applicable today. However, even at that time, which now seems early in the comparatively short history of neurosurgery, great advances had been made in hemostasis, thanks in no small measure to other contributions of Cushing himself.

In Godlee's[2] courageous but unsuccessful removal of a subcortical tumor in 1884, bleeding was controlled "by means of the galvanocautery," a use of electrosurgical methods in neurosurgery to be revived in modern form by Cushing[3 4] thirty-two years later.

In 1887, Durante[5] reported the first successful removal of an intracranial tumor. The lesion was apparently a large olfactory groove meningioma and Durante's only mention of bleeding was the casual statement that

"the haemorrhage was slight and easily controlled by the haemostatic, a tampon treated with sublimate."

From modern experiences with these exceedingly vascular tumors, one cannot help wondering how severe bleeding would have had to be to alarm Durante!

William Keen,[6] in reporting his famous case of removal of a meningioma, in 1888, dwelt somewhat longer on the problem of hemorrhage. He used cocaine to induce vasoconstriction, and employed ligatures wherever necessary. According to his report,

"The effect of cocaine was certainly happy. It contracted a number of vessels that otherwise would have required ligation."

During the ensuing years, the introduction of wax for control of bleeding from bone by Horsley[7 8] and the use of small bits of muscle applied to bleeding points (developed independently by both Horsley[9] and Cushing[1]) were the notable steps in hemostasis which appeared prior to Cushing's paper quoted above. In the latter, the use of "silver clips" introduced a revolutionary factor. The use of pledgets of absorbent cotton instead of gauze sponges, and of finger-pressure to control bleeding from the scalp had already proved valuable adjuncts and the introduction of suction to keep a clean field and reveal bleeding points was soon to provide another.

Such was the status of affairs from 1911, until 1927, with minor technical changes, but no radical departure from a basic technic in which hemostasis was nearly always the determining factor in the success or failure of any major intracranial operation. The surgeon often waited, literally for hours, for pressure and spontaneous coagulation to control a bleeding point, only to see the hemorrhage begin again when his compressing cotton was removed.

In 1927, Cushing[3 4] made his next revolutionary contribution to this problem, namely, the re-introduction of electrocoagulation by the high frequency spark-gap machine developed by Bovie. By this advance, hours were cut from brain operations and average blood loss was greatly diminished.

Many serious problems still remained, however. Bleeding from the great venous "lakes" adjacent to the longitudinal sinus is usually actually made worse by attempts at coagulation. Often it was necessary to remove large amounts

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*Permission to publish the paper has been granted by the Committee on Medical Research, A. N. Richards, Chairman.

of muscle from the patient's leg or to employ muscle from another operation. The diffuse oozing of blood from a tumor bed, the profuse bleeding from epidural spinal veins, the annoying seepage of blood from beneath the bone edges around an osteoplastic flap—these and similar sources of hemorrhage sorely taxed the circulation of the patient and the patience and ingenuity of the surgeon.

The earlier history of hemostasis has been reviewed at length in a monograph by Harvey[10] and, quite recently, in an excellent paper by Light,[11] who has played a pioneer role in developing one of the important newer methods which it is my purpose to discuss herein.

These newer advances in neurosurgical hemostasis involve two innovations: the use of thrombin as a hemostatic agent and the development of three types of absorbable sponge materials.

Thrombin, when added to the fibrinogen in blood plasma, produces almost instantaneous coagulation. Thrombin has been prepared from beef blood in greater and greater purity and concentration, notably by Seegers and his associates[12 13] and has been shown to be safe for use in human surgery.[14]*

A serious technical difficulty was present, however. Thrombin, sprayed on an area of capillary ooze, produced excellent hemostasis. But the coagulum formed by such a spray on actively bleeding vessels of larger caliber was promptly washed away by the stream of blood. If gauze or cotton, saturated with a solution of thrombin, were pressed upon such vessels, prompt hemostasis occurred. But when the tampon was removed, the clot was dislodged and bleeding recurred. There was a need, then, for an absorbable medium for the application of thrombin which could be left in place.

The first answer to this need was oxydized cellulose, developed by Yackel and Kenyon[15] and subsequently extensively investigated in animals by Virginia Frantz and her associates.[16 17] This material, consisting of partially oxydized cellulose, can be prepared as a gauze, as a cotton or as a paper. Although it has not proved to be the most desirable carrier for thrombin, it has shown valuable hemostatic uses in its own right. These uses are principally in the general surgical field where pressure-packing with an absorbable substance may prove invaluable. That oxydized cellulose can be used with thrombin satisfactorily has been shown by Uihlein, Clagett and Osterberg.[18] Recent experiments in our laboratory, as yet incomplete, suggest that this material may be useful in neurosurgery in the rare instances in which a small tight pack may be desirable. They also confirm the observations of Putnam[19] regarding the safety and ready absorbability of the cellulose when placed in the cranial cavity.

The next important development resulted from the extensive studies on the fractionation of human blood carried on under the direction of Professor Edwin Cohn, of the Department of Physical Chemistry at Harvard. Among the bi-products of plasma fractionation was fibrinogen and from this Bering[20] developed fibrin foam. Fibrin foam, when dry, is a rather friable porous substance which readily takes up large amounts of liquid. It is absorbed in body tissues and was at once employed by Ingraham and Bailey[21 22 23] as a medium for the application of thrombin in neurosurgery, with notable success. The thrombin, like the fibrin foam, was derived from human blood donated to the American Red Cross.*

After further trial by a group of neurosurgeons had proved its value and safety beyond question, it was distributed widely in the armed services and has met with wide acclaim.[24 25] In testing fibrin foam, I have had the opportunity of employing it in 344 major neurosurgical operations, and with Dr. W. F. Meacham, I[26] have confirmed its excellent hemostatic qualities, its ready absorption, with minimal reaction, and its lack of toxicity in experimental animals.

The use of thrombin with fibrin foam has proved to be a revolutionary advance in neurosurgical technic and deserves to rank with the introduction of silver clips and electrocoagulation. Small pledgets of the foam, soaked in a solution of thrombin, are held upon bleeding points for a few seconds and then left in situ.

*For details, see the review of Light.[11]

*The use of fibrin as a hemostatic agent had been investigated many years previously by S. C. Harvey, Bost. Med. and Surg. Jour., **174**:658, 1916. Also Ann. Surg., **68**:66, 1918).

Bleeding, even from large veins ceases at once. Small arteries can be similarly controlled, but the method is not suitable for brisk arterial bleeding from larger vessels. However, as already mentioned, it is some types of venous bleeding and diffuse oozing which have defied previous hemostatic methods. This type of hemorrhage is readily controllable by thrombin.

There are two criticisms of fibrin foam, one a minor one, the other quite important. It varies in different preparations, and some are quite friable, "crumbly" and difficult to handle. With experience, this handicap is not a serious one. The second objection is that the production of even a small amount of fibrin foam requires a large quantity of human blood.

Neither of these criticisms is applicable to the third absorbable medium which has recently been developed by Correll and Wise.[27] This is an absorbable foam-like sponge prepared from gelatin. When dry, it is tough, easily cut into any desired size and thickness. It takes up many times its weight of liquid and is absorbed as rapidly as fibrin foam.

This absorbable gelatin sponge was first employed in neurosurgery by Light and Prentice,[28] both experimentally and clinically. Meacham and I[26] have also studied its hemostatic qualities and absorption in experimental animals and, with the collaboration of a group of neurosurgeons, have investigated its use clinically in a large number of neurosurgical operations. These studies were carried out with human thrombin. More recently in another series of patients operated upon by us and by the group of surgeons* listed in *Table 1*, bovine thrombin has been used in conjunction with the gelatin sponge.

The sponge has proved to be an eminently satisfactory medium in the great majority of cases and it promises to become a routine part of the neurosurgical armamentarium.

*The author is grateful for reports from the following neurosurgeons and their associates who have tested these materials: Doctors C. C. Coleman, W. M. Craig, Loyal Davis, E. F. Fincher, Gilbert Horrax, Howard Naffziger, Wilder Penfield, Bronson Ray, Ernest Sachs and Eustace Semmes.

EXPERIENCES WITH GELATIN SPONGE IN CONJUNCTION WITH BOVINE THROMBIN

Investigator	Satisfactory	Unsatisfactory
Coleman	30	0
Craig	2	0
Davis	7	0
Fincher-Swanson	25	0
Horrax-Poppen	11	0
Naffziger	3	0
Penfield	10	0
Pilcher	45	0
Ray	7	0
Sachs	29	1
Semmes	11	0
Total	180	1

Table 1

The employment of bovine thrombin has also given satisfaction. In no instance has any adverse reaction of anaphylactic or antigenic character been observed by us or reported by others. This is in accord with the observations of Light[29] and of Seegers, Warner and their associates.[14 30 31]

Thus the practical application of a physiological principle of hemostasis, which stems from, but goes far beyond the time-honored use of muscle by Horsley and Cushing, has again improved neurosurgery through reduction of blood-loss, saving of time and increased safety.

The author wishes gratefully to acknowledge the furnishing of the various materials described in this paper by their several manufacturers: the fibrin foam and human thrombin were furnished at the request of Dr. Edwin Cohn and his associates by Armour and Company, Cutter Laboratories, Eli Lilly and Company, Parke, Davis and Company, E. R. Squibb and Sons and the Upjohn Company and were produced by these manufacturers under a contract recommended by the Committee on Medical Research between the Office of Scientific Research and Development and Harvard University. The gelatin sponge and bovine thrombin were furnished by the Upjohn Company and the oxydized cellulose by Parke, Davis and Company.

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MODERN TREATMENT OF MUCOCELE OF THE FRONTAL AND ETHMOIDAL SINUSES*

SOME COMMENTS ON THE TREATMENT OF LESIONS PERTAINING TO THE ORBIT AND ADJACENT NASAL SINUSES

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Mucoceles of the frontal and ethmoidal sinuses are of interest not only to the rhinologist but to the ophthalmologist as well. Usually these patients come to the ophthalmologist first, complaining of some disturbance of vision or headache following the use of the eyes, and, as the lesion progresses, double vision occurs. Not infrequently these patients have had several changes of glasses prior to treatment of the mucocele.

Physically a globular swelling may be noted in the upper inner angle of the orbit which continues to expand, finally pressing the eye laterally and downward. There may be a parchment-like crackling upon palpation, and if the posterior wall of the frontal sinus has been eroded and the dura exposed, a pulsation may be noted.

Roentgenograms may show an absorption of the medial orbital wall and a slight increased density differing distinctly from the sharp intense density noted in an osteoma.

The treatment of this lesion is definite and precise and the success of the operation will often lie with the rhinologist who first attempts to correct this lesion.

Occasionally, a rhinologist makes a diagnosis of a mucocele and under local anesthesia removes a large part of, or as much of the mucocele as possible through the nose or antrum. You may rest assured that such a procedure means the patient is going to report later with further trouble, probably necessitating a radical external ethmoid frontal operation. Often these rhinologists will conclude that an external operation is the only operative procedure

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that should be recommended in the treatment of these cases.

We all realize that it is difficult to maintain a nasal frontal opening after any type of a radical frontal sinus operation. In most of these cases the nasal frontal passageway is completely destroyed at operation and the naso-frontal duct is eventually replaced by a hard contracting fibrous mass. The dream of the rhinologist is to construct a new duct that will be lined with epithelium, and such a duct in most cases has already been prepared for us in the development of the mucocele. Let us have a care lest it be destroyed.

If the mucocele develops in the ethmoid and frontal region there is an extension downward and bulging of the ethmoid cells into the middle meatus. The mucocele is lined with a smooth glistening epithelium more perfect than any skin graft known to surgery. Thus, with this picture in mind the surgical approach is made.

If there is a marked deviation of the nasal septum a submucous resection of the septum is performed. If the middle turbinate is large it may be split anteroposteriorly with a No. 15 Bard-Parker blade on a long slender handle. The outer half of the middle turbinate is then removed with a clean cutting through and through biting forceps of the Gruenwald type, and the floor is thus opened into the mucocele usually with a discharge of a thick brownish mucoid material, or pus, if the mucocele has become acutely infected. This opening in the floor of the mucocele is all that is required and no attempt should be made to remove any of its lateral wall. Thus the epithelial lining of this cavity is not destroyed. Following the opening in the nose, pressure with a finger will usually reduce the globular swelling in the orbit. A one per cent solution of novocaine may be injected here if the procedure is painful.

The patient usually leaves the hospital within one or two days and the only treatment necessary is to keep down the granulations, while healing, by the occasional application of a five per cent solution of silver nitrate.

I[1] have followed this proceure very carefully in the treatment of mucoceles over a period of twelve years, and so far have had no recurrences where this procedure was used at the primary operation.

You will find this operation, if carefully done, most gratifying to the surgeon and the patient.

Since I am speaking before both ophthalmologists and otolaryngologists I will mention the treatment of several lesions of common interest to both. I would like to emphasize the importance of early trephine of the frontal sinus in acute ethmoid frontal infections following swimming. Of course, today I must also emphasize the early use of penicillin, 20,000 units every three hours intramuscularly in these cases, combined with sulfadiazine, usually fifteen grains by mouth every four hours with thirty grains or more of soda bicarbonate. If there is evidence of improvement within twelve or twenty-four hours, a trephine operation may not be necessary.

In acute intraorbital infections I have been impressed with the remarkable results obtained by the use of the combined penicillin and sulfadiazine treatment. So long as the eye is movable, incision and drainage can usually wait. But once the eye shows progressive signs of fixing, incision and drainage are imperative.

In most of these lesions requiring operation the abscess is found under the periosteum in the region of the ethmoid cells, and a curved incision made midway between the inner canthus of the eye and the midline of the nose, three-fourths of an inch in length, will suffice when carried down through the periosteum. At this time no attempt should be made at radical surgery in the ethmoid cells or frontal sinus. Occasionally a few anterior ethmoid cells are opened into the nose, but it is safe to wait, once external drainage is established, for the acute infection to subside. Indications for radical surgery later have been rare in my experience where this procedure has been followed.

It is very easy to mistake an acute suppuration of the ethmoid cells in an infant for a dacryocystitis. Simple incision and drainage as mentioned above are sometimes necessary and recovery usually occurs without sinus surgery later.

Rarely one sees a malignant exophthalmos in which there is marked protrusion of the eye, often accompanied by lacrimation, photophobia,

burning and retrobulbar pain. These cases usually follow thyroidectomy but may occur primarily. Sewall[2] suggested an orbital decompression by removal of the ethmoid sinuses, the floor of the frontal, and the floor of the orbit if necessary. The lamina papyracea should be removed as far back as the optic foramen and it may be well to incise the orbital fascia. Kistner[3] was able to effect a recession of the exophthalmos by three to four mm. in four weeks, and there was complete subsidence of symptoms in a few days and gradual improvement in vision. Schall[4] and Reagan have recently reported excellent results following this procedure.

Corneal ulcers, unless traumatic in origin, should always make one suspicious of a chronic infection of a maxillary sinus. In these cases I would not depend upon roentgenogram alone without the injection of iodized oil, which will make it possible for one to read even a one to two mm. thickening of the sinus membrane.

If the membrane shows two or three mm. thickening, with corneal ulcer and possibly a history of bad upper teeth or repeated sinus infections, a large opening should be made under the inferior turbinate into the maxillary sinus. Making this opening is not a simple operation. I have described this operation in detail[5] and each year in teaching courses emphasize its importance. Cases showing only a small opening high under the inferior turbinate some months after the operation are a failure only because the operation was improperly performed. Even the instruments for this operation must be definitely and carefully selected, and any variation from the procedure in my hands has resulted in failure.

An acute optic neuritis is often noted first by the patient in the morning. They awaken and find that they have a central blindness which apparently developed during the night. These cases do not usually show any signs of pus or infection in the ethmoid cells or sphenoid, yet, frequently the vision returns immediately after opening the posterior ethmoid cells or sphenoid. I[6] have in the past ten years, however, learned that the injection of iodized oil in the sphenoid will produce the same spectacular return of vision, if these patients are to be helped at all by any operative manipulations in this area.

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556 Doctors Building

ECTOPIC PREGNANCY*

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and

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Ectopic pregnancy is an important cause of maternal deaths. Every eighteenth such death in Philadelphia, every sixteenth in New York City, and every twelfth in Chicago was due to this cause during the decade 1931-1940 as reported by Williams and Corbet.[1]

During the ten years, 1930 through 1939, every eleventh puerperal death in Richmond was due to ectopic gestation, and during the past five years, 1940 through 1944, every seventeenth such death has been due to this cause.[2 3 4]

Treatment is fairly well standardized; it is in diagnosis that we fail. An analysis of the deaths in any clinic shows the difficulty one encounters in making an accurate diagnosis of this frequently fatal accident of pregnancy.[6 7]

In 1941 we[8] reported a series of 150 cases of ectopic pregnancy, with a gross mortality of 8 per cent, and an operative mortality of 5.4 per cent. One-third of the deaths occurred before operation. During the past five years, 1940 through 1944, we[9] have studied an additional one hundred and fifteen cases of ectopic gesta-

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tion admitted to the Medical College hospitals, with a gross mortality of 1.7 per cent. We attribute this reduction in mortality to a more accurate early diagnosis of this accident, early operation, frequent transfusions, and more extensive use of oxygen therapy during and after operation.

In this paper we will report in detail one hundred and fifteen cases treated during the past five years and review the important points in diagnosis based on the total series of two hundred and sixty-five cases.

Ectopic pregnancy is a gestation which occurs outside the cavity of the uterus. It may be located in the broad ligament, the peritoneal cavity, the ovary or any portion of the fallopian tube, including the interstitial portion.

The pathology of this condition has been investigated by many workers and extensively reported in the literature. We have no new information to add to this. Careful analysis of our cases does indicate that underdevelopment of the female organs of generation and endocrine conditions frequently associated with sterility deserve more extensive study and should be considered a cause of ectopic gestation in many patients who have never had or shown any evidence of salpingitis or pelvic inflammatory disease.

Titus[5] says that ectopic gestation occurs once in every 300 pregnancies. Stander[10] reports an incidence of one in 403 pregnancies at New York Lying-In Hospital. In the Medical College hospitals the incidence was one in every 70 obstetric admissions. This wide variation in occurrence of ectopic gestation in hospital admissions probably depends more on the type of obstetrical case admitted than the section of country from which the reports originate. Our ward service admits only abnormal cases, and the normal cases are attended at home by the home delivery service.

Schumann[11] says that 70 per cent of his cases of ectopic pregnancy occurred between the ages of twenty-four and thirty-three years inclusive. He thinks this corresponds with the first ten years of married life for most women.

Table 1 shows that during the last five years two-thirds of our patients were between the ages of 20 and 30 years, and 84 per cent were between the ages of 20 and 35 years. The youngest was 16 years of age, and the oldest was 42 years of age.

Table 2 shows that 30 per cent of our patients were white and 69 per cent were Negroes. These percentages correspond with our total admissions according to race.

Forty-six of the patients, or 40 per cent, were non-residents of Richmond, and 69 of the patients, or 60 per cent, were residents of Richmond. This also corresponds with our usual hospital admissions. The Medical College hospitals admit the abnormal obstetrical patients from a large surrounding territory, as far as one hundred miles in some directions.

Ectopic pregnancy should be suspected in any woman in the child-bearing age who has abdominal pain, particularly if it is located in the pelvis and unilateral in type. The diagnosis of ectopic gestation is more probable if the patient

AGE

Five Years, 1940 through 1944

Age (years)	Patients (Number)	Per Cent
Under 20	3	2.61
20 to 25	35	30.42
25 to 30	38	33.05
30 to 35	24	20.87
35 to 40	11	9.57
40 or over	4	3.48

73 patients, or 63 per cent of the entire series, were between the ages of 20 and 30 years.

In a larger series, 1930 through 1939, we found that 76 per cent of the patients were between the ages of 20 and 30 years.

Table 1

RACE

Five Years, 1940 through 1944

White	35 patients, or 30.41 per cent
Negro	80 patients, or 69.55 per cent

RACE

Ten Years, 1930 through 1939

White	59 patients, or 39.33 per cent
Negro	91 patients, or 60.66 per cent

Table 2

has a history of amenorrhea or irregular slight vaginal spotting or bleeding. The presence of a unilateral, exquisitely tender, boggy mass in the pelvis increases the probability of this accident.

With the possibility of an extra-uterine pregnancy in mind, the physician should analyze the patient's history and symptoms in an attempt to decide whether she has an acute rupture of the tube or pregnancy, or a leaking or previously ruptured ectopic which has become walled off and developed as an abnormal pelvic mass, usually a hematocele. The first condition usually presents the typical textbook picture of ruptured ectopic pregnancy with an acute sudden onset, sharp pain, a feeling of faintness, or actual syncope, accompanied by an increase in pulse rate, a drop in blood pressure, and rapid decrease in red cells and hemoglobin. The indication for immediate operation is clear.

The second condition, where a hematoma or leaking tube has formed a pelvic mass and become walled off, often taxes our diagnostic ability to the limit. One should rule out pelvic inflammatory disease and small pelvic tumors before operating upon these patients.

We have divided our cases into two groups: the first group admitted with symptoms of an acute rupture, and the second group admitted with a tender pelvic mass, usually unilateral, and a history of pelvic pain for several days or weeks. This differentiation was discussed by Schumann in his excellent monograph on "Ectopic Pregnancy."

Seventy-eight, or 67 per cent, of our patients were admitted with an acute rupture of the pregnancy, and thirty-seven patients, or 32 per cent, were admitted with a pelvic mass.

Sharp lancinating or cutting pelvic pain associated with fainting was recorded ten times more frequently in the acutely ruptured cases than it was in cases with a pelvic mass. Pelvic pain of a dull aching type was recorded three times more frequently in patients with a pelvic mass than it was in those with an acute rupture, and cramplike pelvic pain twice as frequently in the first group as it was in the second. Shoulder pain was eight times more frequent in the acutely ruptured patients than it was in those with a pelvic mass. DeLee and Greenhill[12] say that early in pregnancy the patient with an ectopic

"complains of pains in the lower abdomen, especially on the affected side, cramplike due to uterine contractions and tubal distention."

We believe these pains are due to early hemorrhage into the tube wall often before there is a leak of blood into the peritoneal cavity.

Slight vaginal bleeding or spotting was recorded twice as often in patients with a pelvic mass as in those with an acute rupture of the ectopic. Seventy-eight per cent of the present series had some vaginal bleeding. This corresponds with the vaginal bleeding reported in 74 per cent of our first 150 cases of ectopic gestation. It is interesting to note that the only patient in either series who passed large clots also had multiple uterine fibroids. None of our patients had profuse vaginal bleeding. This is a most useful point in making a differential diagnosis when incomplete abortion is suspected.

There was no history of amenorrhea in 48 patients. The incidence of acute rupture of the tube was the same in those patients with no amenorrhea as it was for those who had missed one or more menses.

Many of the patients in this series were questioned again by one of the authors after operation. We found that frequently the patient said she had not missed a menstrual period, but actually the vaginal bleeding she had noticed

PAIN

Five Years, 1940 through 1944

	Number Patients	Per Cent
None	0	0.00
Shoulder pain	13	11.30
Dull ache	14	12.17
Cramp	66	57.39
Sharp with fainting	34	29.56
Sharp without fainting	41	35.65

Pain is the most common symptom of ectopic gestation. Pelvic pain, either cramplike or dull aching, was encountered in 82 per cent of the first 150 cases we reported, and 80 per cent of the present series. Fainting is less frequent than is usually taught. It was reported in 17 per cent of our first series and 29 per cent of the present series.

Table 3

occurred either before or after her menses had been due, and it was abnormal in amount and duration. Only 37 patients had missed more than one menstrual period. Two out of every three patients sought medical care and were operated upon before the eighth week of pregnancy.

A rapid pulse is one of the most characteristic findings in ruptured ectopic gestation. The pulse rate was below 80 in four patients, or 3 per cent, of this series, and the pulse rate was above 90 per minute in two out of every three cases. This corresponds with the findings in our first series, in which the pulse rate was below 80 in 2 per cent of the cases and above 90 in 66 per cent of the cases. The pulse rate is rapid in both the acutely ruptured cases, and those patients with a pelvic mass due to ruptured ectopic pregnancy.

The blood pressure is usually normal in the patients with a pelvic mass and below 100 systolic most frequently in the acutely ruptured cases. The pulse rate and volume of the pulse will give a more accurate indication as to the condition of the patient who has recovered from the initial shock than will the blood pressure.

The temperature readings give useful information, especially in the differential diagnosis. In three out of every four patients the temperature was below 100°, and in 96 per cent of our patients the temperature was below 101°. In no case was it above 103°, even after the patient had a pelvic examination. We consider the combination of rapid pulse and slight elevation of temperature a valuable aid in ruling out acute or subsiding pelvic inflammatory disease.

The white cell count was below 10,000 in almost one-half of the patients and below 15,000 in 77 patients, or 67 per cent of the cases. The white cell count increases immediately after rupture of an ectopic, but usually drops to normal within 24 hours unless there is a recurrence of the bleeding. The white count is usually lower in the presence of a pelvic mass, due to an ectopic pregnancy, than it is when the pelvic mass is of an inflammatory origin.

The red cell count is low most frequently in the acutely ruptured cases. It increases more rapidly than the hemoglobin in the cases that become walled off and stop bleeding. One of our patients with a hemoglobin of 12 per cent recovered.

We do not believe in posterior colpotomy or puncture of the cul-de-sac with an aspirating needle for the diagnosis of ruptured ectopic. In the presence of an organized clot, no blood will escape through the needle. This procedure also increases the danger of infection. Schumann emphasized this in his monograph in 1921.

Bimanual pelvic examination was resorted to in over 90 per cent of our cases. In a few cases, the history and symptoms made the diagnosis so evident that it was thought unwise to subject the patients to further examination. Manipulation of the cervix caused severe pain in most of the patients. Cervical manipulation did not cause pain in one unruptured cornual pregnancy and several unruptured tubal pregnancies. Un-

VAGINAL BLEEDING

Five Years, 1940 through 1944

	Number Patients	Per Cent
No bleeding	26	22.61
Abnormal menses	27	23.48
Spotting	35	30.42
Intermittent bleeding	43	37.39
Continuous slight bleeding	10	8.70
Profuse bleeding	0	0.00
Clots, small (diameter 1 cm. or less)	17	14.78
Clots, large (associated with large fibroid)	1	0.87

Bloody vaginal discharge occurs in 3 out of every 4 cases of ectopic gestation, but it is rarely, if ever, profuse unless uterine fibroids or some other complication is present.

Table 4

PULSE RATE

Five Years, 1940 through 1944.

	Patients (Number)	Per Cent
Below 80	4	3.47
80 to 90	26	22.60
90 to 100	29	25.21
100 to 110	27	23.47
110 to 120	9	7.83
120 or above	20	17.33

The pulse rate on admission was above eighty in 96 per cent of the patients, and above ninety in 74 per cent of the patients.

Table 5

fortunately, several of our patients went into shock soon after they were examined in the emergency or admitting rooms. While it is desirable for interns and residents to do pelvic examinations, both as an aid in diagnosis and for their own experience, I must emphasize the importance of limiting pelvic examinations, and observing extreme gentleness in doing a pelvic examination on any patient when ectopic pregnancy is suspected, or a possibility.

Eight of the patients in this series, 6.9 per cent, or one in fourteen, had previously been operated upon for ectopic gestation. Titus says that Apajalahti found that within a period of four years, 7.3 per cent of all patients with an ectopic pregnancy on one side had a repetition of the condition on the opposite side.

One of our patients had a recurrence of an ectopic gestation on the opposite side within eight months of the first operation.

Two patients had cornual pregnancies, an incidence of 1.7 per cent.

One had an abdominal pregnancy and was operated upon at the fourth month.

A patient previously reported, had a coexisting ectopic pregnancy and an intra-uterine pregnancy. The ectopic pregnancy was in the right fallopian tube. It ruptured about the eighth week and was removed by laparotomy at that time. The intra-uterine pregnancy went to term and was delivered seven months after the operation for ectopic pregnancy. The baby was normal and the mother's convalescence was uneventful.

The diagnosis of ectopic pregnancy was made prior to operation in 103 of the 115 cases, or 89 per cent. In the remaining 12 cases, the primary diagnosis was not ectopic gestation, but this was a second or third diagnosis in many of these cases. A patient in this group had intestinal obstruction, and a ruptured ectopic. Another was thought to have a malignancy. She had intestinal obstruction and central necrosis of the liver with a leaking ectopic pregnancy.

We believe that early operation was partially responsible for the reduction in mortality in this series of cases. Fifty-eight patients, or 50 per cent, were operated upon within twelve hours after admission to the hospital. In our first series only 40 per cent of the patients were operated upon within twenty-four hours after admission to the hospital.

DEATHS

H. W., age 37, colored, para 7, was admitted January 2, 1944, to the Surgical Service, St. Philip Hospital, with a history of severe abdominal pain for the previous four weeks. At times the pain was cramplike. The last menses were not accurately recorded. She thought she had menstruated during the month before admission. Her temperature was 101.5°, pulse 120, and she was severely ill, very jaundiced, with abdomen distended. There were no fluid levels, but distention of the entire intestinal tract. Pelvic examination revealed tenderness in both adnexal regions, and on manipulation of the cervix. Her white cell count was 7,800, polymorphonuclears were 74 per cent, and hemoglobin 46 per cent. She was operated upon on January 3 through a right rectus incision for suspected malignancy and intestinal obstruction. She was found to have a ruptured ectopic of the left tube and blood in the peritoneal cavity. She was transfused five times, receiving a total of 2,500 c. c. of whole blood during and after operation. She died seven days postoperatively. The day before death, the red cell count was 4,000,000, and hemoglobin was 84 per cent. The icteric index was 36 units on admission, and it increased to 61 units before death. Autopsy revealed central necrosis of the liver and peritonitis.

P. M., a 36-year-old colored woman, para 2, was admitted to St. Philip Hospital at 8:00 p.m., June 8, 1944, in shock. A history was obtained of a full term delivery in January, five months before admission. She menstruated last on March 30, 1944, two months before admission to the hospital, and had been sick ever since with cramplike abdominal and pelvic pain, and occasional fainting spells. She was seen by her local physician twenty-four hours before hospitalization. On admission, she was comatose, answered questions

MORTALITY

Five Years, 1940 through 1944

Total number cases.....115
Two patients died. Mortality 1.7 per cent

MORTALITY

Ten Years, 1930 through 1939

Total number cases.....150
Twelve patients died. Mortality 8 per cent
Operative mortality 5.4 per cent
(Four patients died without operation)

Table 6

incoherently, and showed typical air hunger. Her temperature was 100.5°, pulse 140, respiration 30, blood pressure, systolic 94, diastolic 60. Blood examination showed red cells 1,670,000, hemoglobin 24 per cent, white cells 18,000, and polymorphonuclears 82 per cent. This patient was operated upon soon after admission. There was a pregnancy mass the size of an orange in the right fallopian tube, and 1,000 c. c. of liquid and clotted blood in the peritoneal cavity. The right tube was removed. The patient was given 500 c. c. of whole blood during the operation and this was followed by 500 c. c. of plasma. She left the operating room in better condition than she was when admitted. Her blood pressure was: systolic 120, diastolic 60. Her pulse was 140. She died suddenly three hours after operation. Permission for autopsy could not be obtained.

These two cases illustrate the importance of an early correct diagnosis and early operation. Some patients with ectopic pregnancies too long neglected cannot be saved by hospitalization and operation.

TREATMENT

Titus says:

"Expectant treatment for an ectopic pregnancy at any stage and in any location is highly hazardous, as the sac may rupture without a moment's warning and the patient die from the ensuing hemorrhage."

We agree with this statement and wish to emphasize the following:

Operation for removal of an ectopic pregnancy should be done as rapidly as possible after the diagnosis is made.

Morphine or "pantopon" both before and after the operation decreases the patient's pain, apprehension, and restlessness. In most cases any form of stimulation or intravenous injection to raise the blood pressure should be avoided until the bleeding vessels can be ligated. We usually start a transfusion just as the patient is ready for operation. The volume of blood a patient needs corresponds with the amount she has lost. This can be calculated fairly accurately. We have found ether anesthesia with a high concentration of oxygen very satisfactory even in our worst cases.

The operation should be completed as rapidly as is compatible with good surgery. It should be limited to removal of the ectopic pregnancy and control of the hemorrhage.

The use of continuous oxygen therapy during and after operation has been valuable in the treatment of our patients.

In conclusion, we should like to repeat the following points as an aid in the early diagnosis of ectopic gestation and consequently, the successful treatment of this accident of pregnancy.

(1) There is abdominal pain, usually unilateral, frequently described as sharp, lancinating, stabbing or tearing, but sometimes cramplike, and usually intermittent even though dull. The pain usually has a definite onset and is frequently noticed after exertion, defecation, and sometimes after intercourse. The severity of shock is in proportion to the rapidity of onset as well as the amount of internal hemorrhage.

(2) A careful history reveals an irregularity of menses, either in interval or amount and duration of flow. Amenorrhea for one month or more is frequent in ectopic gestation.

(3) The presence of a unilateral tender boggy pelvic mass was diagnosed in sixty of our patients, or 51 per cent.

(4) Manipulation or pressure on the cervix causes severe pain in most cases.

(5) Slight bloody vaginal discharge was observed in 75 per cent of our patients.

(6) A rapid pulse rate, associated with low hemoglobin, and normal or slightly elevated temperature is very suggestive of ruptured ectopic gestation.

(7) Pelvic examination should be extremely gentle and limited to one if possible.

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PRINCIPLES OF PENICILLIN THERAPY*

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Penicillin, in the treatment of certain infections due to specific organisms, has been used universally for some time and many observations have been recorded. This is, therefore, a favorable opportunity to review past experiences and present knowledge with the idea of formulating some principles which may serve as a guide in the use of this drug. From the vast literature on the subject, it is possible to obtain information regarding the indications and contraindications for the use of penicillin and to reach stable conclusions on which to base a rationale for proper dosage and methods of administration.

There are several important indications for the use of penicillin which have become apparent during the period of study and investigation of this drug. First, its use is important in the treatment of diseases due to bacteria which are known to be susceptible to its action. Textbooks[1 2 3] and papers[4 5] on the subject list these organisms in detail. Suffice it to say that most gram positive cocci are susceptible, but show varying degrees of sensitivity. Of the gram negative diplococci, Neisseria gonococcus and Neisseria intracellularis are sensitive. The anthrax bacillus, important strains of the clostridia and the spirochetes, Cornyebacterium diphtheriae, and Actinomyces bovis have also been shown to be sensitive. Penicillin should be used, therefore, to treat infections due to these organisms.

The use of penicillin is indicated when safety and absence of toxicity to the patient are of prime importance. This occurs when the patient is severely debilitated or extremely ill. Under such circumstances, the use of a sulfonamide may cause more harm than good. In this connection, it is important to mention meningococcus meningitis. Although most strains of meningococci are sensitive to penicillin, a few are not. For the most part, therefore, since this infection responds readily to sulfadiazine, this drug is the one of choice in the treatment of most cases of this disease. However, when a patient with meningococcus meningitis is first seen in shock and is very seriously ill, it may be dangerous to begin therapy with intravenous sodium sulfadiazine. Under such conditions, the initial administration of penicillin both systemically and intrathecally is indicated until shock has been successfully combatted; then sulfadiazine can be safely administered. Penicillin is a safe drug to use when kidney or liver disease is present. While a sulfonamide may further injure an already damaged kidney, penicillin is not harmful, and actually when renal function is depressed, higher blood levels of penicillin can be maintained more easily. Of course, when a patient is known to be sensitive to the sulfonamides, penicillin should be used in infections where both drugs are known to be effective.

Thirdly, penicillin is indicated in the treatment of mixed infections where one or more of the etiological organisms is penicillin-sensitive, even though other organisms contributing to the infection are known to be completely resistant. Such a situation exists when a patient with a gram negative bacillary infection or an infection due to a virus or the rickettsiae develops, in addition, an infection caused by a penicillin sensitive organism.

There are certain serious infections in which the causative organism is equally sensitive to both penicillin and the sulfonamides, and both drugs should be used. This situation arises, for example, in the case of infections of the meninges through which penicillin diffuses poorly. Waring and Smith[6] have combined penicillin and the sulfonamides in the treatment of pneumococcus meningitis with marked reduction in the expected mortality. Whether this is due to true synergism or not will be discussed later.

The contraindications to the use of penicillin are very few in number. It is obvious that this drug will be ineffective and should not be employed to treat infections due to penicillin-resistant organisms which include gram negative bacilli, viruses and the rickettsiae. Contraindications to the use of the drug on the basis of toxic reactions are extremely rare. With improved methods of purification, toxic reactions have occurred less and less frequently. The ill

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effects which have been attributed to penicillin are for the most part in the nature of sensitivity or allergic reactions such as urticaria, and dermatitis. These may actually be caused by the impurities in the preparation, although Welch and Rostenberg[7] have reported tuberculin-like skin reactions due to crystalline penicillin. On very rare occasions, skin reactions are severe enough to preclude further use of penicillin because of the danger of precipitating exfoliative dermatitis.

There are several rather controversial points which should be considered when a discussion of the subject of penicillin is undertaken. One of these is penicillin resistance. This phenomenon may occur under three circumstances. In the first place, certain organisms such as the gram negative bacilli, the viruses, and the rickettsiae are very highly resistant to the action of penicillin. Some of these insensitive organisms, for example E. coli, have been found to produce an enzyme-like substance, "penicillinase," which Abraham and Chain[8] have shown inactivates the drug. In the second place, there are those species of organisms which are usually sensitive to penicillin, but of which certain strains are resistant. For example, Rammelkamp and Maxon,[9] and Spink and his associates[10] have observed that ten per cent of the strains of staphylococcus isolated from clinical sources are resistant to penicillin. Kirby[11] was able to demonstrate that resistant strains of staphylococci produce a penicillinase-like substance. Certain strains of meningococci may also be naturally resistant to penicillin. Finally, there are organisms which develop resistance only after continued exposure to penicillin.

In contrast to experience with the sulfonamides, the development of penicillin resistance during the course of treatment is unusual and for the most part is clinically unimportant. Staphylococci, however, are more prone to become resistant than other organisms, especially if dosage is initially inadequate. In the case diagrammatically represented by *Fig. 1,* the staphylococcus isolated at the start of therapy was penicillin sensitive. Results of continued treatment were unsatisfactory and the staphylococcus isolated later was highly resistant *in vitro.*

The problem of synergism is an unsolved one. There is no definite evidence as to whether or not penicillin and some of the sulfonamides exert a true synergistic action when used in

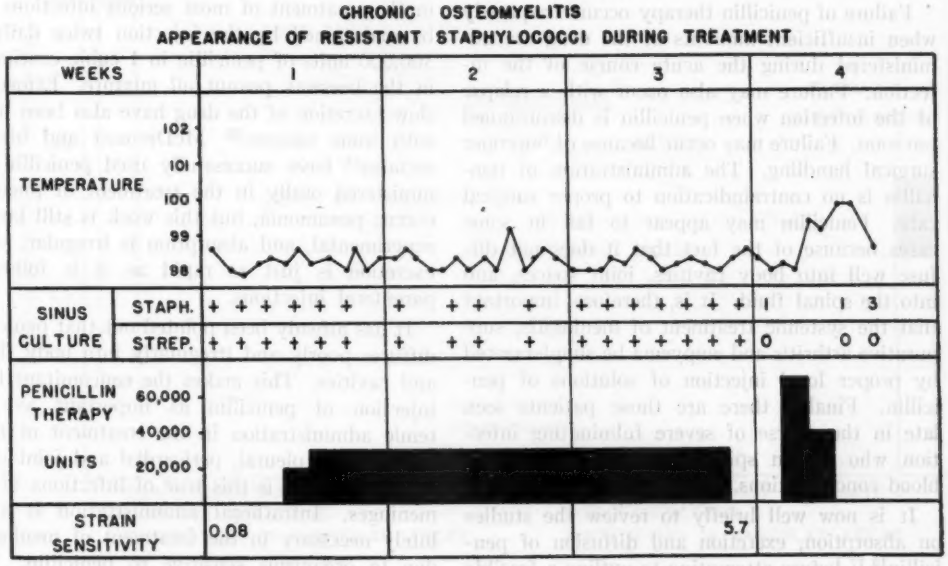

Fig. 1
(Taken from article by Rammelkamp and Kirby in press.)

combination. There is inconclusive data supporting both sides of the argument.[13 14 15] It is probable, however, that the concentration of penicillin necessary for effective bacteriostatic action is great enough so that no significant difference is produced by the concomitant administration of a sulfonamide. It should be pointed out, however, that the use of any one of the sulfonamides with penicillin, while usually unnecessary, is not harmful. In the treatment of some serious infections, when diffusion and penetration of penicillin into the infected area is known to be inadequate, simultaneous administration of a sulfonamide may be very desirable.

Penicillin, when properly used against a sensitive organism, is almost always effective. But there are times when penicillin, even when apparently properly administered, appears to fail.[16] Several factors may be responsible for these apparent failures. In the first place, the etiological organism may be insensitive either because it belongs to a totally resistant species such as E. coli, or because it is a resistant strain of an ordinarily sensitive species such as the staphylococcus, or because resistance may have developed during the course of treatment.

Failure of penicillin therapy occurs frequently when insufficient amounts of the drug are administered during the acute course of the infection. Failure may also occur with a relapse of the infection when penicillin is discontinued too soon. Failure may occur because of improper surgical handling. The administration of penicillin is no contraindication to proper surgical care. Penicillin may appear to fail in some cases because of the fact that it does not diffuse well into body cavities, joint spaces, and into the spinal fluid. It is, therefore, important that the systemic treatment of meningitis, suppurative arthritis and empyema be supplemented by proper local injection of solutions of penicillin. Finally, there are those patients seen late in the course of severe fulminating infection who die in spite of seemingly adequate blood concentrations.

It is now well briefly to review the studies on absorption, excretion and diffusion of penicillin[12 17] before attempting to outline a feasible plan for ideal treatment of an infection with penicillin. The chief disadvantage of penicillin in saline solution is the rapidity with which it is absorbed and excreted. When injected intramuscularly, maximal concentrations in the blood are reached within 15 to 20 minutes. Thus, absorption is so rapid that it is unnecessary to begin penicillin therapy with an initial intravenous injection. But once absorbed, penicillin is excreted very rapidly, to such an extent that within 2 hours 80 per cent can be recovered from the urine. It is important to note that doubling an intramuscular dose of penicillin in saline prolongs the duration of detectable levels by only one-third. For example, if 50,000 units be injected intramuscularly, detectable blood levels persist for three hours. If 100,000 units be administered, detectable levels persist only about four hours.

Efforts are being made to perfect methods of delaying the absorption of penicillin by mixing it with beeswax and peanut oil,[18] by the use of vasoconstrictors[19] and by the application of cold compresses near the sight of injection.[20] The most promising of these methods at present is the intramuscular injection of penicillin beeswax peanut oil mixtures devised by Romansky.[18] Kirby[21] and Romansky[22] have both demonstrated convincingly that blood levels effective in the treatment of most serious infections can be maintained by the injection twice daily of 300,000 units of penicillin in 1 cubic centimeter in the beeswax peanut oil mixture. Efforts to slow excretion of the drug have also been made with some success.[23] McDermott and his associates[24] have successfully used penicillin administered orally in the treatment of pneumococcus pneumonia, but this work is still largely experimental, and absorption is irregular, while excretion is just as rapid as it is following parenteral injections.

It has already been pointed out that penicillin diffuses poorly and irregularly into body fluids and cavities. This makes the concomitant local injection of penicillin as important as systemic administration in the treatment of most infections of pleural, pericardial and joint cavities. Especially is this true of infections of the meninges. Intrathecal administration is absolutely necessary in the treatment of meningitis due to organisms sensitive to penicillin. The one exception to the use of both intrathecal and parenteral injections in meningitis, in which re-

sults with intramuscular injections alone appear to be excellent, is syphilitic meningitis.

If penicillin is to be used properly and effectively, adequate levels of the drug must be maintained at the site of the infection for a sufficient length of time to insure complete cure. Three questions must now be answered: what levels are considered adequate; how best can these levels be maintained; and how long should these levels be continued.

Levels which are considered adequate vary with different species of sensitive organisms. For example, among the gram positive cocci which are penicillin sensitive, staphylococci in general have been shown to be relatively resistant. Higher concentrations of penicillin in the blood are required for maximal bacteriostatic effect in the treatment of staphylococcal infections than are required in treating infections due to B-hemolytic streptococci which are notably sensitive to the action of the drug. In addition to the staphylococcus, many strains of Streptococcus viridans and nonhemolytic streptococci should be included in the resistant group. Because of the serious nature of infections such as syphilis, diphtheria and gas gangrene, the organisms causing these diseases should also be regarded as highly resistant from a therapeutic standpoint until more information is available concerning their susceptibility both *in vivo* and *in vitro*. Organisms other than B-hemolytic streptococci which may be considered highly sensitive are the gonococcus and pneumococcus. Strains of intermediate sensitivity are represented by the meningococcus.

Now, obviously, because of the difference in their sensitivity, the same dosage of penicillin which results in maximally effective blood concentrations in the treatment of an infection due to B-hemolytic streptococci would be significantly less than that needed for optimal treatment of an infection due to the markedly more

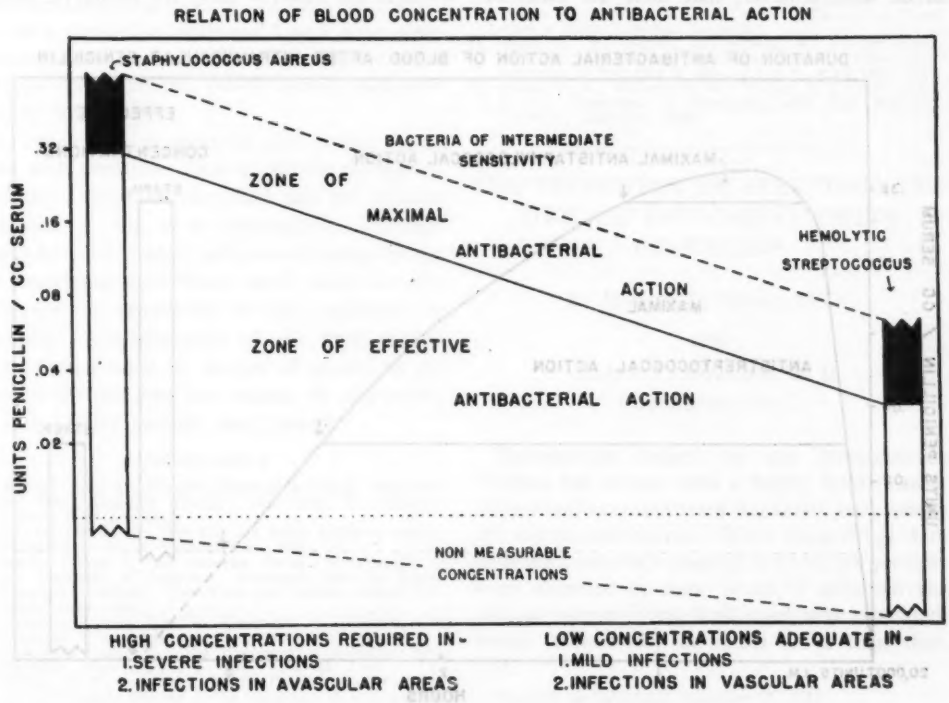

Fig. 2
(Taken from article by Rammelkamp and Kirby in press.)

resistant staphylococcus. Other factors of importance in determining the size of the dose and necessary blood levels are the severity of the infection, the vascularity of the area involved and the barriers through which penicillin must diffuse or penetrate in order to come in contact with the infecting organisms. *Fig. 2,* taken from a paper by Rammelkamp and Kirby,[12] summarizes diagrammatically the broad relationships of the concentrations of penicillin in the blood stream to the sensitivity of various organisms as well as the other factors. As can be seen, a blood level of penicillin of 0.32 units per c. c. is necessary for a maximal antibacterial activity against organisms as resistant as staphylococci, while a concentration of only 0.04 units per cubic centimeter is necessary for maximal antibacterial action against the sensitive organisms. Ideally, levels exerting a maximal antibacterial action should be maintained throughout the treatment of an infection. It can be seen, however, that there are zones of effective antibacterial action which are lower than the optimal levels. *Fig. 3*[12] presents the relationship of these zones of antibacterial activity to blood levels obtained with an intramuscular injection of 20,000 units of penicillin in saline. Maximal action against the staphylococcus is produced by this dose for a period of only about one hour while the same dose produces levels of maximal activity against a sensitive strain such as the hemolytic streptococcus lasting almost three hours. Levels which are definitely bacteriostatic, although not maximal, persist for longer periods, as is indicated.

It is not within the scope of this paper to make specific recommendations of dosages for each type of infection, but from these figures it is possible to plan a rational scheme of therapy for various infections. In treating staphylococcal infections, and infections due to other relatively resistant organisms, injections of 25,000 units every two hours produce optimal continuous levels in the blood stream; for hemolytic strep-

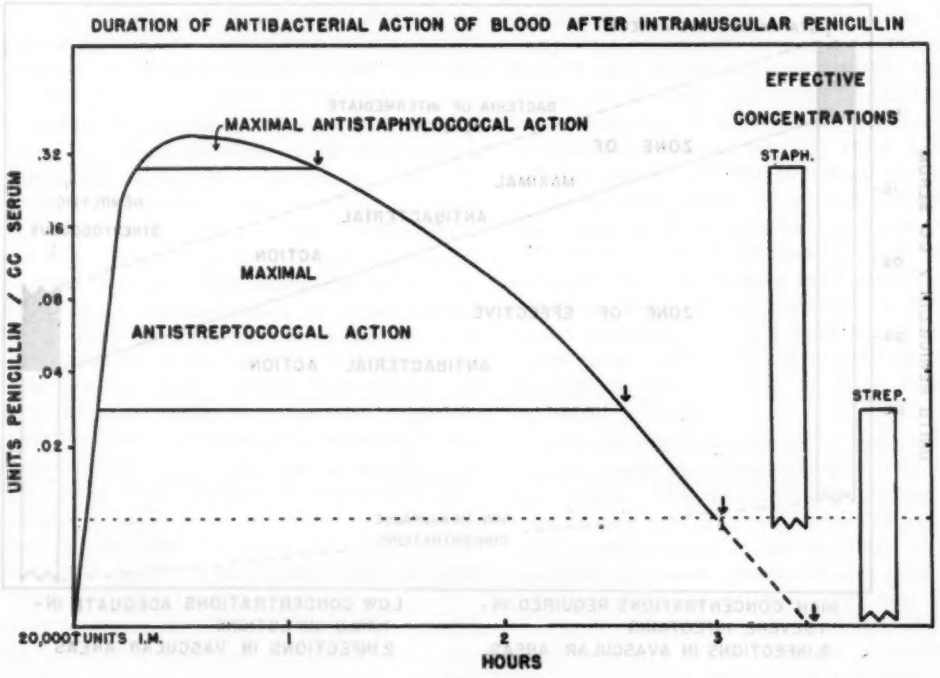

Fig. 3

(Taken from article by Rammelkamp and Kirby in press.)

(Arrows indicate time that subsequent injections of penicillin are required to maintain the indicated degree of antibacterial action).

tococcal infection and infections due to other organisms known to be very sensitive to penicillin, 15,000 units every three hours are adequate. Blood levels which can be more or less constantly maintained with a continuous intravenous or intramuscular infusion for 24 hours are as follows: with 100,000 units per day, 0.1 unit per cubic centimeter; with 200,000 units 0.2 unit per cubic centimeter; and with 400,000 units per day, a blood level of 0.4 unit per cubic centimeter can be maintained.

How long should the administration of penicillin with the maintenance of adequate blood levels be continued? It has been convincingly demonstrated[21] that in pneumococcal infections, although penicillin may destroy some of the organisms present in the parenchyma of the lung, a reactivation of the infection may be caused by pneumococci remaining viable in the bronchial exudate if treatment is discontinued too soon. Streptococcal infections may also be reactivated after apparent cure by viable organisms remaining after incomplete therapy. In these infections, penicillin should be continued 3 to 5 days after apparent cure. In serious infections due to more resistant organisms this period should be appropriately lengthened.

In conclusion, in order to give proper treatment with penicillin, first of all the etiological organism should be identified and its relative resistance to the drug determined. Therapy should be started early with an adequate dosage and maintenance of blood levels based on the resistance or sensitivity of the organism to penicillin. Administration of the drug should be continued until all danger of spread or relapse of the infection has passed. In any event, be sure to give enough, long enough.

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THE TREATMENT OF STREPTOCOCCUS VIRIDANS ENDOCARDITIS WITH PENICILLIN*

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Endocarditis caused by the Streptococcus viridans has always been a highly fatal disease. Before sulfonamides were available, only rarely did any patient recover. When these drugs were employed, recovery rates up to about six per cent were observed in some series,[1,2] although the average recovery rate, if all cases were tabulated, would undoubtedly be much lower than that.

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The first attempts to use penicillin did not produce favorable results,[3-11] but Loewe and his associates[12] later reported remissions in seven patients who received large doses of penicillin for several weeks, administered along with heparin.

Since patients receiving heparin sometimes develop complications as a result of diminished coagulability of the blood[13 14] and occasionally have embolic accidents even in the presence of heparin,[13-15] we decided to treat our patients with relatively large doses of penicillin for a period of eight weeks without adjuvant heparin therapy. The present paper is a report of ten consecutive patients treated in this manner.

As shown in *Table 1*, each patient had symptoms which were typical of bacterial endocarditis varying in duration from one week to one year. All of the patients, except one, had signs of rheumatic heart disease with involvement of the mitral valve. Four had involvement of the aortic valve also. One was in the second decade of life, two in the third, five in the fourth and two in the fifth. Five of the patients entered with complications already present. Three had hemiplegias as a result of cerebral emboli, one was psychotic, and another had severe renal failure. The Streptococcus viridans was cultured from two or more specimens of blood on each patient before treatment with penicillin was started.

In the first patients we attempted to administer penicillin continuously by vein, but soon found that this method was impractical. In the patients treated subsequently, penicillin was administered for a few days by the continuous intramuscular method or by intramuscular injections at two-hour intervals. When the continuous intramuscular or intravenous method of administration was employed, the dose was 200,000 units for each twenty-four hour period. Most of the patients who were given intermittent injections received 25,000 to 30,000 units every two hours until the blood cultures had become sterile and the fever had subsided. Thereafter, they were given 20,000 units every two hours until the eight-week treatment period had been completed. Several patients received 15,000 units every two hours for the last few days of treatment in order to conserve penicillin. In the case of one patient (L.I.) treatment was discontinued at the end of thirty-two days when the supply of penicillin was temporarily exhausted. Three weeks later she developed fever, malaise and right upper quadrant pain. Although her blood cultures remained sterile, the possibility that these symptoms indicated a relapse impelled us to give her penicillin for thirty-five more days. One patient (M.B.) was treated for sixty-five days for reasons which will be discussed below. Another patient (R.S.) was given capsules of penicillin suspended in cottonseed oil orally for thirty-six hours, followed by the usual intramuscular doses thereafter.

RESULTS

As shown in *Table 1*, four patients died. One patient died after twelve, another after twenty-one, and the third after nineteen days of penicillin treatment. The fourth patient died six months after the completion of penicillin therapy.

The first patient (B.G.) was apparently a schizophrenic, being disoriented, resistant and violently active throughout the twelve days until he died. Post mortem examination revealed chronic rheumatic heart disease with cardiac hypertrophy and dilatation, mitral and aortic valve involvement with superimposed vegetations, pulmonary infarction and many peripheral emboli.

The second patient who died entered the hospital in uremia which was apparently due to a focal nephritis. She later developed thrombophlebitis of the veins of the left lower extremity followed by pulmonary infarction and congestive heart failure. Permission for an autopsy was not granted.

The third patient entered with hemiplegia resulting from a cerebral accident the previous day. He was known to have had neurosyphilis which was confirmed by examination of the spinal fluid. During his hospital stay he developed a left lower lobe pneumonia and embolization of the right brachial artery. There was no improvement in his condition except for sterilization of the blood stream. He died after nineteen days of treatment. Post mortem examination revealed a luetic aortitis and calcification of the aorta. The heart was somewhat hypertrophied and dilated with no abnormality of the valves except for a vegetation on the left posterior cusp of the aortic valve with perforation of the cusp. There was gray hepatization of the left lower lobe. An embolus completely occluding the right brachial artery was found.

The remaining patient (M.B.) lived for six months after completion of penicillin therapy. Because she continued to run a fever of 1 to 2° Fahrenheit, and appeared ill, even though the blood cultures had been negative ever since the second day of penicillin therapy, she was treated for sixty-five days instead of the usual fifty-six. During the six-month period between termination of treatment and death, the patient remained

bedridden with grade four congestive heart failure, which was only partly controlled on a vigorous cardiac regime, including digitalis, restriction of fluids and of sodium chloride, and the frequent administration of mercupurin. She had many bouts of fever, during all of which the blood cultures were sterile. It was thought that her fever and congestive heart failure were due either to repeated pulmonary infarctions superimposed on a heart already damaged by rheumatic fever and subacute bacterial endocarditis, or to active rheumatic fever. Post mortem examination revealed multiple old and recent pulmonary infarcts and old infarcts in the spleen. The heart was dilated and rheumatic mitral valvulitis was present. No evidence of active or healed endocarditis was found. It was impossible, however, to determine whether endocarditis had been engrafted upon the rheumatic valvular lesion and had later healed. Although the diagnosis of bacterial endocarditis could not be verified pathologically in this case, the clinical and bacteriological evidence was unequivocal: numerous petechiae, splinter hemorrhages, enlargement of the spleen, and five positive blood cul-

CLINICAL DATA ON PATIENTS WITH STREPTOCOCCUS VIRIDANS ENDOCARDITIS TREATED WITH PENICILLIN

Patient	Age	Sex	Color	Heart Valves Involved	Complications before Treatment	Duration of Infection (Months)	Duration of Treatment (Days)	Total Dose of Penicillin (in Million Units)	Complications during Treatment	Result	Period of Observation after Treatment
B.G.	20	M	C	Aortic Mitral	Psychosis	1	12	2.5	Pulmonary infarction Congestive heart failure Splenic infarction	Died	——
R.L.	36	M	W	Mitral	Cerebral embolism with left hemiplegia	1 week	56	8.5	None	Free of infection	12 mos.
L.I.	43	F	W	Mitral	None	5	32 (31 day interval) 35	22.0	Splenic infarction Petechiae	Free of infection	12 mos.
R.L.	32	M	W	Mitral	Cerebral embolism with right hemiplegia	12	56	16.0	None	Free of infection	9 mos.
L.P.	38	F	C	Aortic Mitral	None	4	56	12.5	Congestive heart failure	Free of infection*	9 mos,
M.B.	27	F	W	Aortic Mitral	None	3	65	28.0	Pulmonary infraction Congestive heart failure	Died of congestive heart failure	6 mos. before death. Healed endocarditis at autopsy.
J.K.	31	M	W	Mitral	None	2	56	16.5	Splenic infarction Petechiae	Free of infection	7 mos.
D.P.	13	F	W	Aortic Mitral	None	3	56	11.5	Embolus to a finger	Free of infection	4 mos.
R.S.	39	F	C	Mitral	Renal failure	4	21	10.0	Pulmonary infarction Thrombietibis of veins of lower extremities Congestive heart failure	Died	——
A.R.	42	M	W	None	Cerebral embolism with left hemiplegia	1	19	11.0	Lobar pneumonia Embolization of right brachial artery	Died	——

*Has congestive heart failure.

Table I

tures obtained over the course of four days. Furthermore, many infarcts were found in the spleen at autopsy.

Six patients have been discharged from the hospital apparently free of their infections. The time elapsing since the end of penicillin treatment in these patients varies from four to twelve months. We have examined each of them at intervals since discharge. All are apparently well except one. She (L.P.) developed congestive heart failure during her hospital stay, and still has grade one congestive failure seven months after discharge.

We have been interested in determining whether we might be able to predict a successful outcome in a given case at the start of penicillin therapy, and, if so, upon what factors this prognosis could be based. It is apparent that neither the age of the patient nor the duration of the infection before treatment had any bearing upon the ultimate result. Others,[13] as well as we, have noted that the type and number of valves involved were not indicative of the ultimate prognosis. Complications were too few in number to be evaluated properly, but it is of interest that two patients recovered out of the three who were treated after they had had a cerebral embolus and resulting hemiplegia.

In the six patients who have recovered, improvement was quite obvious within the first three to four days of treatment. At the end of ten days or two weeks, all of these patients appeared clinically well. With the exception of M.B., whose death was apparently the result of congestive heart failure, none of the patients who died showed a drop in temperature to normal at any time.

We tested the sensitivity to penicillin of the organisms cultured from the blood of the last five patients treated. In every case, the streptococcus showed a relatively high degree of sensitivity to penicillin. Four of these patients recovered from the disease. Blood for cultures were taken at hourly intervals from five patients and placed in media containing penicillinase. In the case of four of these the peripheral blood was shown to be sterilized in three to six hours. The other patient was given penicillin orally at first. When the concentrations of penicillin obtained in the patient's blood were found to be insufficient to kill *in vitro* the streptococcus cultured from the blood, administration of penicillin by intramuscular injections of 30,000 units every two hours was begun. Blood cultures remained positive until the intramuscular method was instituted.

We have observed, as have others,[12-15 17] petechiae, splenic infarction and other signs of embolization for as long as six weeks after all signs of the active infection were gone. Four patients developed congestive heart failure during treatment. In two, this occurred following pulmonary infarction and the patients died. Previous rheumatic heart disease aggravated by the infection was undoubtedly responsible for the heart failure in the remaining two patients. Congestive heart failure has been reported as occurring in patients under treatment by other investigators.[2 14 15 17]

DISCUSSION

That penicillin will produce a remission in some cases of endocarditis caused by Streptococcus viridans is a fact which has now become firmly established. Evidence is accumulating which makes it likely that many of these patients are actually cured of the disease. Loewe[15] and Rosenblatt[16] have each reported cases in which the patients died of an unrelated cause several months after completion of treatment and showed no evidence of active infection in the valves. Meads[14] and Bloomfield[17] also have reported cases dying after completion of penicillin treatment, in whom the valves appeared healed and bacteria were found deep in the valves on smear; yet cultures were sterile. Our results are in keeping with the experience of others. Among ten consecutive patients treated by us with penicillin alone, six have been free from evidences of infection for periods varying from four to twelve months.* A patient who died of congestive heart failure six months after completion of therapy showed no definite evidence of endocarditis at autopsy.

In one major respect, the penicillin therapy received by our patients differed from that employed in most of the reported cases. We established eight weeks as the minimum length of

*_Authors' Note_ (12/11, 1945)—Since this paper was submitted for publication all the patients who were reported as being apparently recovered have been followed and have maintained their status as described in the paper. The follow-up period for this group of patients is now seven to fifteen months.

penicillin therapy. Three patients died before this period was up. The fourth patient died six months after treatment was completed of congestive heart failure and free of evidence of remaining infection. Treatment in the case of one other patient was discontinued after thirty-two days because of a shortage of penicillin. Three weeks later she appeared to have a relapse, and was treated for another thirty-five days. Twelve months later she is well, leading an active life. The five remaining patients, who were treated for at least eight weeks, are apparently free from the infection, and up to the present time none of them has experienced a relapse. Nearly all investigators, reporting their experiences with penicillin in the treatment of subacute bacterial endocarditis, have reported at least a few relapses.[2 12-15] It is interesting that these relapses have always occurred in patients treated for a month or less, and have responded to a second course of the same drug. In spite of this fact, there are obvious advantages inherent in a procedure which will apparently terminate the infection during the first course of treatment. First, any regime which allows relapses to occur automatically increases the chance of complications occurring, any one of which can be fatal. For instance, deaths from cerebral emboli or heart disease have been reported during a relapse of the disease.

Second, when a relapse takes place, and another course of penicillin is needed, the total amount of the drug consumed and the period of hospitalization required is greater than if one long course of penicillin had been used in the first place.

Third, whenever relapses occur, the possibility of the development of a resistant strain of the organism is greatly enhanced. The principles already established for antibiotic therapy in general would make it mandatory that we eradicate the infection completely with a single course of treatment, whenever this is possible. Whether a slightly shorter period than eight weeks would be just as satisfactory is a problem which must be settled by further trials. Loewe[15] recommends that all patients be treated for at least five weeks. Bloomfield and his co-workers[17] advocate six to eight weeks of treatment, Mokotoff and associates[18] advocate between three to nine weeks of treatment, preferably the latter.

Our experience also shows that all patients should be treated with penicillin regardless of the severity of their condition, the presence of complications or the duration of the disease prior to the introduction of penicillin therapy. These factors are not indicative of the ultimate outcome. Others have made similar observations. Loewe[15] has stated that he started treatment on several patients whom he believed would not survive very long, and yet some of these patients recovered.

SUMMARY AND CONCLUSIONS

(1) Six out of ten consecutive patients treated with penicillin have remained free of all evidences of infection for from four to twelve months. An additional patient died of congestive heart failure six months after the termination of penicillin and showed no signs of active infection at autopsy.

(2) Age, sex, color, valvular involvement, and duration of infection were not factors in the ultimate prognosis of these patients. The presence of a serious complication before treatment did not necessarily preclude recovery.

(3) It is concluded that patients with endocarditis should be treated with penicillin for a period of eight weeks. By this method, relapses are apparently avoided.

We wish to thank Dr. Roger Choisser and the members of his staff for the privilege of reporting the pathological findings on the autopsied cases; the staff of the Georgetown Medical Division for permission to report the case of A.R., and Miss C. Barbara O'Neil and Mrs. Rose Breen for technical assistance.

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DOES THE FRACTIONAL DAILY URINE EXAMINATION ON A DIABETIC PATIENT FURNISH US THE IDEAL MEANS OF CONTROL?*

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Fractional urine examinations (before breakfast, lunch, dinner and at bed-time) is an accepted routine in many hospitals. Many physicians have their patients follow this routine at home, following their discharge from the hospital, day in and day out, over long periods of time. It is supposed to help the patient to keep a close control of his diabetic state. On this basis of the test, the patient can take a unit or more "extra" of insulin if glycosuria appears any time during the day and thus make an immediate adjustment of the "spill."

Such an idea sounds quite logical on the surface. What could be simpler than the above procedure? The question is: does it represent facts and does it really accomplish what it is intended to accomplish?

To understand glycosuria one must understand the varying levels of glycemia during the day. In any person glycosuria will appear when the blood sugar level has risen above his particular renal threshold. This is apt to happen following a meal when we get a rise of blood sugar which rise varies in all individuals, more in some, less in others; we speak of this as "post-prandial hyperglycemia" which is a normal physiological process. In diabetes the same thing happens, but it is accentuated. We get higher rises of the blood sugar after meals and consequently are apt to get more frequent "spilling" of sugar from the blood stream into the urine. In ordinary routine we try to adjust the insulin dosage in such a way that it may avoid the spilling of sugar. However, it is not always possible to do so if we have regard for the patient and try not to make the treatment worse than the disease. There are cases that we can control and in which we can eliminate all glycosuria; and in others, no matter what the routine, how many injections of insulin a day, we still get some glycosuria. In the latter we have to compromise in our routine.

The question of renal threshold for sugar is by no means a cut and dry proposition. It is not, as stated in many textbooks on diabetes, a fixed point at say 180 mg. per cent of blood sugar concentration in all individuals. It varies tremendously, in diabetics and non-diabetics; it can be as low as 54 or as high as 500 plus mg. per cent, but is usually somewhere between 140 and 200 mg. per cent. Unless we know the approximate threshold of each patient, we can not interpret the findings of glycosuria. Let us take for example a patient with a threshold of 70 mg. per cent. Such an individual will show glycosuria most of the time, if not all the time. And he may even be a diabetic. Or, let us take an individual with a renal threshold of say 380 mg. per cent. Such a person will not show any glycosuria when he is running a high blood sugar; he may be having blood sugar during the day varying from 250 to 360 mg. per cent and be sugar free. Were he to depend on urine examinations 4 times a day as indices of control, he would, if urines were sugar free, miss the mark badly. Such cases are not exceptions. It is known that diabetics of long standing will develop a high renal threshold for sugar which is perhaps nature's attempt to prevent excretion of too much sugar. We know that hyperglycemia if allowed to continue, will in time destroy the

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insulinogenic function of the pancreas and produce a more severe diabetic state. Thus, if one tries to follow the status of a diabetic by fractional urine analyses alone, one is between the Scylla and Charibdis or in plain English, in hot water.

It is often said that some patients cannot have systematic blood sugar studies at home because they live too far from laboratories or, they cannot be transported. Actually this is not true. Some 20 years ago I tried and did solve this problem, thinking of the physician in the more remote regions who wants to do good work but has not the facilities in his office. I devised a blood sugar tube on the model of the Keidel vacuum tube, which is all ready and sterile, packed in a wooden case. Chemicals in this tube prevent the decomposition of sugar for a week or more. Such a sample of blood can be mailed to any laboratory in the U. S. The directions are printed on a slip inside each wooden case. It has had considerable vogue in some states and is used by some of the state board of health laboratories and insurance companies. On the sample of blood, besides sugar, determination of urea, non-protein nitrogen, uric acid, and so on, can be done and one checks on the slip what examination is wanted. Now, with air mail delivery, the whole problem of speed is simplified so that no matter how far a doctor may be from a medical center, he can get prompt information in a short time.

Let us come back to the problem of glycosuria in the control of a diabetic on diet and on insulin. As stated above, such a patient may show glycosuria in one or two specimens of urine during the day. He is instructed to take 1 to 7 units "extra" of insulin at that time. He does, and the next specimen may or may not be sugar free. Or, he may take no "extra" insulin and the urine becomes sugar free and remains so for days. These are facts that anyone who takes the trouble to observe such patients can find out for himself. Does an occasional glycosuria have much significance? Does it have to be counteracted with additional insulin? The answer is: How much sugar? Here we come to a point which has been one of the great fallacies going on for decades in American medicine. The patient or the doctor will answer: one per cent, half a per cent, or two per cent. Does this mean anything? Two per cent of what? One per cent of sugar in 50 c. c. of urine is 0.5 gram of sugar; one per cent of sugar is 500 c. c. is 5 grams; one per cent of sugar in 1,000 c. c. of urine is 10 grams. The third urine contains exactly 20 times as much sugar as the first urine does and yet the percentage in both is the same. Unless we know the amount of urine voided, we have no way of knowing what amount of sugar the percentage represents. The important thing is not the per cent, but how many grams the patient is excreting in 24 hours. This is the best test of adequacy of the treatment schedule provided we cannot have the proper blood sugar studies.

If a diabetic carries a reasonable blood sugar level throughout the day, and excretes 10 gm. or less per 24 hours, he can be considered as reasonably well controlled. A diabetic who excretes no sugar in the urine and who carries hyperglycemia through most of the 24 hours, is not well controlled. In him we require the blood sugar levels throughout the day (three times a day) for proper control. Once we adjust the blood sugar level to a near physiological level, we need pay very little attention to the urine as sugar is automatically eliminated unless the patient has a very low renal threshold. Glycosuria has very little significance in a case with a low renal threshold.

What stimulated me to write this paper is a letter received from one of my old patients, a woman now past 60, who first came under my care in 1923. At that time her physical condition was very bad indeed; she had yellow xanthomas on the eyelids, acetone breath, marked emaciation and was very weak. This was at the time when insulin was first discovered. In a few weeks, with the aid of diet and insulin, her status changed quickly and she improved rapidly, gained strength and soon was able to do her cooking, and later her housework. The transformation was remarkable in that early insulin era. For 22 years she has lived the normal life of a housewife.

On April 28, 1945, I received a letter from her in which she did not sound like herself. She was upset and worried, and in part said: ". . . 22 years is a long time and I should be reconciled to go, but I've been so well and enjoyed living and I hate to be swept down without any apparent reason. The saying 'a diabetic could live a long time if he took care of himself' had gotten me believing it."

What brought about such a state of despondency in this sensible and rational woman who has been a diabetic over 22 years? The answer is "urine examina-

tions." Since my entrance into military service over four years ago, the patient has been under the care of another physician. He instituted daily urine examinations (before breakfast, lunch, dinner and at bed time) and had the patient keep a chart of these all those months. Directions given were: "Take 'extra' insulin if single specimen indicates sugar; if yellow, 3 units; if orange, 5 units; if red, 7 units, but take none after evening meal." During April, 1945, she was taking 40 units of protamine zinc insulin and 10 units insulin, both before breakfast. The data for the month of April which she sent me appears in *Table 1*. It was these data which caused her to be so upset.

There are some interesting points in this table to consider. Note that on April 2, she had a severe reaction in the morning, thus no check before breakfast and lunch. At supper and bed time she showed 3/4 and 2 per cent of sugar respectively. Why? Because to meet the reaction, she took extra carbohydrate, the insulin dosage was not enough to take care of the added carbohydrate and glycosuria appeared in the evening. I venture to say that the total glycosuria did not amount to more than 2 or 3 grams which is of no significance. April 3, she showed 0.5 per cent in the morning, none at noon and evening, and 1 per cent at bed time. She took no extra insulin. April 4, the morning and noon specimen was sugar free, the noon showed 1 per cent sugar, she took 3 units of insulin and the evening specimen showed 0.5 per cent sugar. Next morning she took 40 units protamine zinc insulin and 10 units insulin (her routine dose) and all specimens were sugar free. Next day, the sixth, the first two specimens were sugar free, the evening one showed 0.5 per cent, she took 2 units insulin and the evening specimen was sugar free. Next day she showed 0.25 per cent sugar before supper, took 2 units insulin, the same as the day before, and the evening specimen which was sugar free the day before, showed 1 per cent sugar.

All the above variations could well be due to the amount of urine excreted at the time and the actual amount of sugar excreted has little or no significance as it is minimal. It just disturbs the patient.

On April 14 she showed 0.25 per cent sugar at bed time. Next morning she took the same dosage of insulin, 40 and 10, and in the evening had 0.25 per cent of sugar in the urine. On April 15 she took the same dosage, 40 and 10, showing 2 per cent before supper and at bed time. No

DIET: Carboh. 160, Protein 74, Fat 74 grams, Cals. 1,602.
INSULIN: PZI 40 units. I. 10 units, before breakfast.
Urine Examinations

Date	PZI-I	Before breakfast	Before lunch	Before dinner	Before bedtime	Remarks
April						
1	40-8	blue	blue	blue	blue	
2	40-8	Severe reaction, no ck.		0.75 per cent	2 per cent	
3	40-8	0.5 per cent	blue	blue	1 per cent	
4	40-8	blue	blue	1 per cent (3 units)	0.5 per cent	
5	40-10	blue	blue	blue		
6	40-10	blue	blue	0.50 per cent (2 units)	blue	
7	40-10	blue	blue	0.25 per cent (2 units)	1 per cent	note increase
8	40-10	blue	blue	blue	blue	
9	40-10	blue	blue	blue	blue	
10	40-10	blue	blue	blue	blue	
11	40-10	blue	blue	blue	blue	
12	40-10	blue	blue	blue	blue	
13	40-10	blue	blue	blue	blue	
14	40-10	blue	blue	blue	0.25 per cent	
15	40-10	blue	blue	2 per cent	2 per cent	
16	40-10	blue	blue	blue	blue	no increase ins.
17	40-10	blue	blue	blue	blue	
18	40-10	blue	blue	blue	blue	
19	40-10	blue	blue	blue	blue	
20	40-10	blue	blue	0.5 per cent	2 per cent	
21	40-10	blue	blue	1 per cent	2 per cent	
22	40-10	0.5 per cent	blue	1 per cent (2 units)	2 per cent	
23	40-6	blue (6 units)	0.25 per cent	2 per cent		
24	40-10	blue	0.25 per cent	2 per cent		
25	42-12	2 per cent		1 per cent	0.75 per cent	
26	44-14	2 per cent	blue	blue	2 per cent	
27	44-14	0.5 per cent	2 per cent (7 units)	1 per cent	blue	
28	40-10	blue (3 units)	1 per cent			

Table 1

extra insulin was taken and the next 4 days all specimens were sugar free. Thus, extra insulin or no extra insulin, the thing straightens out of its own accord.

From April 20 on she began to show sugar in the last two specimens and gradually it appeared in 3 specimens and she became excited, began to increase her morning dosage to 42 and 12, 44 and 14 and the excretion continued. It looked bad to her but in reality all that was needed was to put her mind at ease, to explain to her that it was not so significant as she thought, to continue on 44 and 14 until she began to have reactions, then to cut it to 42 and 12, 40 and 10 and stick to that dosage which, as shown by previous blood sugar checks, controls her condition reasonably well. Her blood sugar checks are shown in *Table 2*.

It is evident from the above that her diabetic state is under reasonable control on an average dosage of 42 and 8 units (PZI-I) a day. That an occasional glycosuria shows up during the day is of no significance provided it does not keep increasing, which would indicate that more insulin is needed. A proper blood sugar check up tells the patient's condition, whether or not he is controlled, so that proper changes in the dosage can be instituted. If it is done on the basis of urine analyses, one is more or less at sea as the actual amount of sugar may be insignificant but because the urine is small in volume, this insignificant amount of sugar will give a strong reaction. If that same amount of sugar appears in a larger volume of urine, the reaction will be much less. Thus, again to emphasize the point: it is not the per cent of sugar in the urine that is of significance, but the total amount of sugar excreted in 24 hours. I always prefer to do a 24-hour quantitative sugar determination in addition to the three blood sugars in order to determine just how much sugar the patient is excreting. If more than 10 grams, adjustment of insulin dosage is indicated. The real test, however, is not glycosuria, but the glycemic level throughout the day.* That, and only that tells the significant story. Patients are frequently upset when they find glycosuria. It is not good psychology. I feel it applies only to one type of a patient, namely, the careless individual who, upon finding of glycosuria is apt to get a scare and be brought back to a straight and narrow path. But to punish thus the good diabetic patient and help to upset his condition seems to me hardly justifiable.

	8	12	5	PZI-I
1942				
Nov. 18	115	160	60	42-8
1943				
Mar. 9	135	170	70	42-8
Aug. 3	66	138	99	48-8
Dec. 18	50	56	48	42-8
1944				
Mar. 13	125	173	50	41-8
June 13	50	170	105	41-8
Oct. 17	84	167	150	41-8

Table 2

SUMMARY

Repeated urine examinations on a diabetic patient, estimating only the percentage of sugar, are apt to be misleading and should not be depended upon to give a good index of his diabetic status.

The finding of an occasional glycosuria is apt to represent the excretion of only a few grams of sugar in the urine per 24 hours and in that respect it has but little significance. A better procedure is to estimate the actual excretion of sugar per 24 hours in grams. If it exceeds 10 grams per 24 hours, adjustment in the insulin dosage is indicated.

A still better procedure for evaluation of the control of the diabetic state is the three times a day blood sugar determination. This plan eliminates the uncertain problem of renal threshold for sugar, which varies in patients. It indicates whether any given routine of treatment is adequate or inadequate and thus enables us to adjust the insulin routine properly.

*(The proper glycemic level consists of normal or near normal blood sugar before each meal. The postprandial blood sugar rise is physiological; it is more pronounced in the diabetic; if such a rise returns to normal in three hours, that is, before the next meal, then certainly we have accomplished all that can be accomplished by the dietetic and insulin routine. If the morning blood sugar is normal, the noon somewhat elevated, and the evening one normal, then either a smaller breakfast or else giving the insulin earlier, or else increasing the insulin by 2 to 4 units and diminishing the protamine zinc insulin by that amount (if both are given in the morning) will bring about the lowering of the noon blood sugar. If the morning and noon blood sugar are normal and the evening one somewhat elevated, then a smaller meal at noon will correct it. The fasting blood sugar of any patient taking protamine zinc insulin or PZI plus I, should be 100 mg. per cent or less. If it is above normal, that alone indicates that the dosage of protamine zinc insulin is inadequate and needs to be increased. Thus the morning blood sugar is a direct index of the overall protamine zinc insulin dosage.)

OBSERVATIONS ON THE TREATMENT OF DIABETES MELLITUS COMPLICATED BY PULMONARY TUBERCULOSIS*

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It has been known for centuries that individuals suffering from diabetes mellitus are especially prone to the development of pulmonary tuberculosis. It is evident that diabetics have no more contacts with pulmonary tuberculosis than non-diabetics; therefore, it must follow that diabetics have a more pronounced diathesis than non-diabetics. It is held that either the lowered resistance of the lack of control, or a combination of the two, is responsible for this diathetic manifestation. It would seem logical that with the advent of improved therapy, the incidence of this complication should decrease. Inquiry into the literature would seem to confirm this reasoning. Windle[1] in 1883 reporting on an autopsy series of 333 diabetics found that one-half showed pulmonary tuberculosis. Twenty-nine years later, Montgomery[2] reported an incidence of 24 per cent and Fitz[3] in 1924 stated that about one-fifth of the patients in his series revealed evidences of pulmonary tuberculosis.

In a study of 101 autopsies on proved diabetics, from 1928-1941 at the Charity Hospital at New Orleans,[4] only seven cases of pulmonary tuberculosis were found. These figures are essentially the same as those obtained by Himsworth,[5] who found 15 tuberculous lesions in 230 cases, two by clinical methods and the rest radiologically. From 1898 to 1914, 4.7 per cent of the diabetic deaths were primarily due to pulmonary tuberculosis. From 1914-1922 tuberculosis accounted for 5.7 per cent and from 1922-1935 for 6.7 per cent of the primary deaths. Therefore, it is evident that because of better control and prolonged life expectancy for diabetics, more of these patients are dying from the complicating tuberculosis than from the diabetes itself.

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MATERIAL

For this study we chose those diabetics who had had roentgenograms of the chest, and in addition could supply known data as to duration of diabetes, presence or absence of diabetic coma, and known therapy. Of the total number of patients, 53 satisfied these criteria, being members of the colored race and 24 of the white. The sex ratio was 45 females to 8 males. The ages of these patients varied from 7 years to 87 years with an average age of 44 years. All of these patients had attended the diabetic clinic of Charity Hospital.

DISCUSSION

The ratio of female to male patients in this series was found to be 5.6 to one (*Fig. 1*). This is somewhat at variance with the nation-wide ratio in that in our group, complicating tuberculosis is even more prominent in the female. In Joslin's private cases, there was an increase in female patients from 41 per cent in his first 100 cases to 64 per cent in the eighteenth thousand. This increase is probably due both to better medical investigation of the female as compared with a few decades ago, and to the increase in the longevity of the female. The Nation Health Survey, which comprised a study

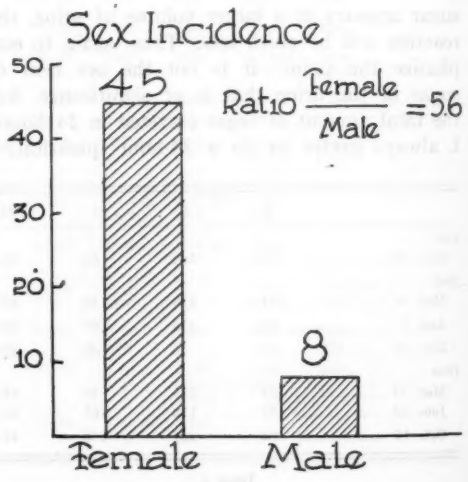

Fig. 1

of 2,502,391 cases, produced a female/male ratio of 2.3 to one.

In our total of 53 cases, 29 were colored and 24 were white, giving a white/colored ratio of 0.7 (*Fig. 2*). Negroes at one time were thought to be racially resistant to diabetes mellitus but recent studies indicated that many are affected with this disease. Leopold's[6] white/colored ratio in 1931 was 1:2 which would agree even more closely with our own results if one considers that approximately 62 per cent of the total admissions to Charity Hospital are Negroes. However, it is generally conceded that Negroes have a lower morbidity although a higher mortality to diabetes mellitus than do members of the white race.[4]

Our results as to age incidence agree rather closely with varied reports, the predominance being in the fourth, fifth, and sixth decades of life in both races.

Of particular interest in this series was the incidence of roentgenological evidence of pulmonary tuberculosis. Of the 53 cases four had definite x-ray evidence of pulmonary tuberculosis, four had strongly suggestive x-rays and three had slightly suggestive x-rays. This gave a percentage of 7.5 as compared with Root and Bloor's[7] 5.6, Himsworth's 6.5,[5] and Root's[8] later series of 7.6. Although, the morbidity seems to vary considerably in these series, a study of mortality records shows, as stated previously,

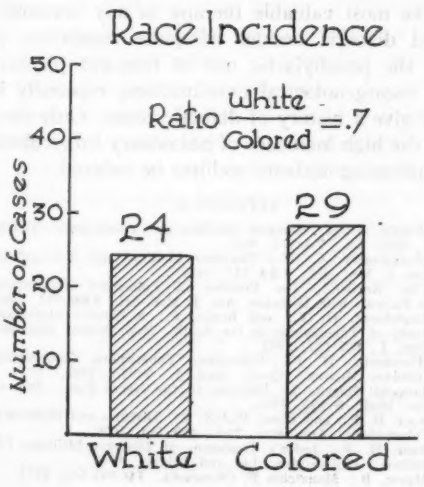

Fig. 2

that tuberculosis as the cause of death is steadily increasing in diabetics and they are not dying of the diabetes per se. This can be easily explained by pointing out the specificity of insulin in the treatment of diabetes.

Tuberculosis in diabetics has certain peculiarities which are hard to explain. Cavities are present in nearly 50 per cent of the cases. Rapidly developing caseation has been considered characteristic of diabetic patients with tuberculosis and roentgenologists describe a "butter fly" type of lesion, which consists of a soft exudative process spreading peripherally from the hilus. The apex and base are frequently uninvolved. Clinically, however, this type of tuberculosis shows no distinguishing characteristics. A "non-sensitized" form of tuberculosis resembling the primary tuberculosis of children occurs frequently in Negroes. Mayer[9] says that tuberculosis of the larynx and upper respiratory tract shows quick progress and caseation in diabetics. Pleural adhesions are much more frequent in diabetics than in "non-diabetics" but tuberculosis involving serous structures other than the pleura is very rare. It is widely known that coma and tuberculosis go hand in hand. In one series of cases involving asthenic diabetics, 80 per cent who had had coma developed tuberculosis; this compares with our 75 per cent very closely (*Fig. 3*).

The prognosis of patients with tuberculosis and diabetes is about as good as the tuberculosis itself. If discovered at comparable stages, a "mixed" case should live as long as an uncomplicated case of tuberculosis. Only by the discovery of tuberculosis in an incipient stage can the prognosis be greatly improved.

TREATMENT

We feel that the diet prescribed should be adequate enough to allow the patient to gain sufficient weight so that he reaches an optimal figure. Between 35 to 40 calories per kilogram is usually enough and we prefer that it be broken down to at least 250 grams of carbohydrate, 1 to 1½ grams of protein per kilo of body weight and enough fat to make up the desired number of calories.

Any attempt to submit tuberculous diabetics to a low calorie diet will result in nothing better than a decrease or even loss of their glycosuria

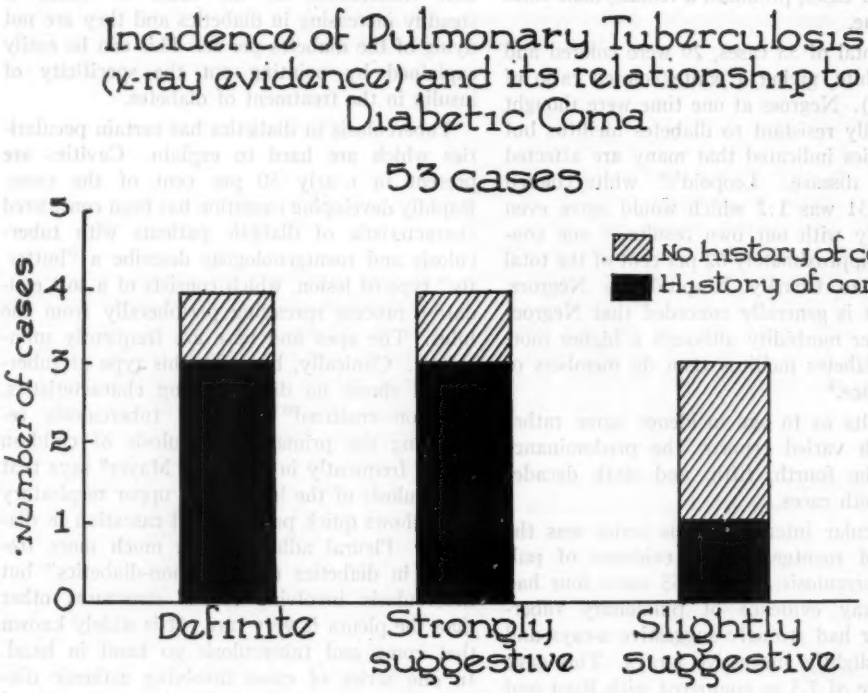

Fig. 3

at best, and a progression of their tuberculosis is highly probable. Fishberg[10] has emphasized this statement. A moderate hyperglycemia is harmless and excessive measures to lower it should not be employed, especially in older patients.[11] When the tuberculous patient becomes toxic, a fluid or semi-fluid diet is advised. This diet should equal the more solid diet in carbohydrate, protein and caloric content. Later as the condition improves, a more solid diet is substituted. The same general principles used in the treatment of tuberculosis are valuable in these patients, namely: fresh air, freedom from psychic trauma and rest. Surgical procedures should be carried out when indicated.[12]

Diabetics with tuberculosis almost always require insulin. It is essential that the diabetics with tuberculosis be well controlled and to insure this we give the patient protamine zinc insulin and unmodified insulin on the sliding scale.

We consider a patient regulated when he spills 5 per cent or less of the total available carbohydrate in his diet in 24 hours and is always free of acetoneuria.

The most valuable therapy in any uncomplicated diabetic besides adequate regulation, is still the prophylactic one of frequent physical and roentgenological examinations, especially if they give a history of diabetic coma. Only then will the high incidence of pulmonary tuberculosis complicating diabetes mellitus be reduced.

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TEN YEARS EXPERIENCE WITH AN OPERATION FOR THE CURE OF CERTAIN TYPES OF SEXUAL IMPOTENCE*

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Ten years ago the senior author devised an operation for the relief of certain types of sexual impotence. Since then, some 350 persons have been selected for operation from the many thousands who have applied.[2 3 4] It seems appropriate at this time to review the results, and to this end as many patients have been contacted as could possibly be reached, and the results of the survey will be discussed in this publication.

The types of cases that are benefited by this operation are those in which the impotence is due to (1) traumatism of the perineum following (a) an external blow (with or without rupture of the urethra) or (b) surgical operation, (2) inflammatory lesions of the perineum resulting in extensive scar formation, (3) lack of muscle tone, and (4) excessive sexual activity (including masturbation). It has also been successful in certain cases of advancing age, namely in men who have ample libido, normal testicles and hence normal secretion of the sex hormones, and no interference with the nervous tracts involved in the sexual act. The operation is not indicated in cases of psychic impotence or impotence due to neurological disease such as tabes dorsalis, nor is it intended for old men.

Technic of Operation.—Certain changes have been made in the original operation, which now is performed as follows:

The anesthetized patient (spinal or sacral anesthesia) is placed on the operating table in the exaggerated lithotomy position, and a No. 19-F. sound is passed into the urethra.

An incision is made over the bulging part of the perineum, extending in the midline from a point about 10 cm. from the anal margin down toward that structure for about 5 cm. A branch is then made laterally on each side to a point just above the attachment of the crus penis, the completed incision resembling an inverted Y. The incision is deepened through fat and areolar tissue until the corpus spongiosum, surrounded by the bulbocavernosus muscle, and the crus penis (corpus cavernosum) on each side, surrounded by the ischiocavernosus muscle, are exposed.

Chromic ribbon gut, studded with an atraumatic needle, is inserted into the lateral edge of the bulbocavernosus muscle, pulled across the belly of the muscle, and passed through the other side, with just sufficient strain to plicate the muscle and produce the exact amount of pressure to reinforce any contraction necessary to aid in producing an erection. Two more similar stitches may be required to tighten the whole muscle. A figure-of-eight ribbon gut suture is inserted into the ischiocavernosus muscle on each side, care being taken not to injure or unduly compress the fairly numerous nerves and blood vessels in this area. By tightening the suture, a reef is taken in the muscle, thus shortening it by approximately one inch.

The wound is closed in layers without drainage.

An incision 4 cm. long is then made over the suspensory ligament, which is exposed and freed by blunt dissection. A compression suture is placed in the two leaves of the suspensory ligament of the penis, causing a moderate, persistent compression which prevents a too-rapid flow of blood out of the organ.

This last step of the operation is done because three of the patients in the original series were

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*The opinions or assertions contained herein are the private ones of the authors and are not to be construed as official or reflecting the views of the Navy Department or the naval service at large.

†Lieutenant Commander, Medical Corps, U. S. Navy.

relieved at first and then became less efficient due to the fact that the dorsal veins of the penis enlarged and allowed the collateral circulation to carry off the stasis too freely.

In order to accomplish the desired result, this operation must be skilfully performed, with just the right amount of shortening of the muscles. If the muscles are too tight, a constant painful erection will result; if not tight enough, satisfactory erections will not be produced. Its success apparently depends upon the use of chromic ribbon gut, which does not tear through the delicate muscles as does ordinary twisted catgut.

RESUME OF 199 CASES

The value of an operative procedure is determined, not by the immediate effects, but by the permanence of the results. Although some 350 patients have been operated upon by the above procedure during the past 10 years, in various hospitals, only 199 of these have been followed up. Therefore, our estimate of the results of this operation must be confined to this group, almost all of whom were operated upon at the Department of Urology, James Buchanan Brady Foundation, of the New York Hospital. Undoubtedly the results of the entire series are better than those recorded in this partial survey because patients who have difficulties following an operation of this type are prone to complain of the unsatisfactory results.

Of these 199 patients, a total of 85 (43 per cent) had successful results, 65 (33 per cent) were definitely improved, 36 (18 per cent) remained unchanged, and 13 (6 per cent) could not be followed up to date. (*Table 1*).

The most successful group of cases were those in which the impotence followed external trauma to the perineum (straddle injuries, etc.) or perineal surgery. Of the former, 79 per cent were either successful or improved; of the latter, 82 per cent. Of 4 patients with definite histories of ruptured urethra due to external trauma, all had excellent results as determined by follow-up studies.

Illustrative of the latter type of case is the history of Lieutenant . . . of the United States Navy, aged 24 years, who had his urethra ruptured coincidentally with fracture of his pelvis when the gun which he was commanding on a destroyer recoiled and pinned him between the breech and the metal guard around it. He was seen by the senior author who recommended operation because of the total impotence suffered as a result of this accident. The operation was performed by the senior author at St. Albans Hospital in accordance with the above method, and he made a perfectly satisfactory recovery. He was able to consummate his marriage happily.

During recent inspection trips to Naval hospitals, in the course of which the senior author visited 19 institutions, he found only one hospital in which there was not a case of ruptured urethra with accompanying impotence. Traumatic impotence has, therefore, become an im-

RESUME OF 199 CASES OF IMPOTENCE TREATED BY OPERATION

Cause	Age							Last Normal Intercourse								Result							
	Number of Cases	20 to 30 years	31 to 40	41 to 50	51 to 60	61 to 74	Not known	—1 year	2 to 3 years	4 to 5	6 to 8	9 to 11	12 to 14	15 to 20	Never normal	Unknown	Successful	Per Cent	Improved	Per Cent	Unchanged	Per Cent	Not followed up	Per Cent
External Trauma (mainly to perineum)	19	5	9	4	1	—	—	5	4	4	1	2	—	1	2	—	10	53	5	26	4	21	—	—
Surgical Operation (chiefly perineal)	11	1	1	4	5	—	—	4	5	—	—	—	—	1	1	—	4	37	5	45	2	18	—	—
Advancing Age	28	—	—	5	15	8	—	6	6	6	2	2	2	3	1	—	9	32	8	29	7	25	4	14
Sexual Excesses (including masturbation)	22	5	9	6	1	—	1	4	5	3	1	2	—	2	4	1	10	45	5	23	5	23	2	9
Cause Not Given	119	19	36	40	20	2	2	17	26	20	9	11	1	6	21	8	52	44	42	35	18	15	7	10
Total	199	30	55	59	42	10	3	36	46	33	13	17	3	13	29	9	85	43	65	33	36	18	13	6

Table 1

portant lesion due to the large number of cases found in our Armed Forces, all of which are curable by the operation herein described.

Of the 22 patients in this series who gave a history of early sexual excesses (including masturbation), 15 (68 per cent) were either cured or improved.

The poorest results in this series was in the group whose impotence was attributed to advancing age, but even here a majority were definitely benefited. Most of these patients were between 51 and 60 years of age. Of 8 men between the ages of 61 and 74 years, 2 (aged 67 and 74 years respectively) had entirely satisfactory results, and 3 others (aged 74, 65, and 65 years) were improved. The operation is not, however, intended for old men.

CONCLUSIONS

Ten years experience with an operation for the cure of sexual impotence leads us to conclude as follows:

(1) Contraction of the ischiocavernosus and bulbocavernosus muscles causes the physiological phenomenon of erection, as proved beyond question by experimental surgery on dogs.

(2) Dislocation of these muscles by removal, or by interference with the pelvic musculature, causes impotence in animals and in the human male as well.

(3) The operation described here (namely plication of the ischiocavernosus muscle on each side and of the bulbocavernosus muscle) should not be done until all other forms of treatment have failed.

(4) Patients suffering from sexual impotence due to rupture of the urethra or other traumatism of the perineal structures are curable by this operation. Cases of traumatic impotence are occurring in considerable numbers in our Armed Forces, and the operation therefore has a definite place in war surgery.

(5) Patients who have become impotent, or partially so, due to excessive sexual activity (including masturbation) are mostly curable by the operation.

(6) The operation is not indicated in cases of psychic impotence or neurological disease such as tabes dorsalis. Nor is it intended for old men, although 2 men in this series, aged 67 and 74 years respectively, had successful results, and 3 others, aged 65, 65, and 74 years, were markedly improved.

(7) Forty-three per cent of the patients were cured, 33 per cent improved, 18 per cent unchanged, and 6 per cent could not be followed up. These patients ranged in age from 22 to 74 years.

(8) In this entire group, 10 children are known to have been born who never would have been conceived with these fathers had it not been for this operation.

(9) The permanence of the operation has been established. It would seem that if the procedure is properly done on suitable patients the cure is permanent, as evidenced by the fact that the first two patients operated upon are still perfectly potent sexually after a period of 10 years.

(10) The operation must be carefully performed in such a manner that the sutures are not placed too tightly nor too loosely. In the former case, edema of the penis will result; in the latter, the proper erections will not be maintained.

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Southern Medical Journal

JOURNAL OF THE

SOUTHERN MEDICAL ASSOCIATION

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Volume 39 JANUARY 1946 Number 1

EDITORIAL DEPARTMENT

DR. ELMER LEE HENDERSON

President-Elect of the Southern Medical Association

The ordinary physician who has many interruptions, lives in the midst of life's great emergencies, and excuses his delayed appearance always easily, rarely has as an outstanding virtue the characteristic of punctuality for all engagements.

The Journal is told by Dr. Henderson's close associates that he is always on time, and dependable as the couriers of the mail, whom neither snow nor heat nor gloom of night can stay from the swift completion of their appointed rounds. Two disastrous floods in Louisville have not interfered with his early morning operating schedule, this despite the fact that during the 1937 flood in Louisville he was Deputy State Health Officer and Chairman of the Welfare Division along the Ohio Flood Basin.

Born on a farm in Garnettsville, Meade County, Kentucky, in 1885, the son of Jonas and Henrietta H. Henderson, the new President-Elect was graduated from the University of Louisville School of Medicine in 1909, and married Laura Belle Owen, of Austin, Minnesota, two years later. She was a trained nurse at City Hospital in Louisville. They have two children, William Owen and Henrietta Marie. The President-Elect entered upon general practice in Louisville in 1911. During World War I, he served as Captain and Major in the Medical Corps of the United States Army, and was with the American Expeditionary Force for nine months. His first service in the Army was a course of training at the Mayo Clinic. For ten years following the War, until 1929, he held a commission as Lieutenant Colonel in the Medical Reserve Corps. He has travelled extensively in Europe and the United States. Since his release from military service after World War I, he has limited his practice to general surgery. He has done able work in many medical organizations.

He is a Diplomate of the American Board of Surgery and Fellow of the American College of Surgeons. He has been President of his county and state medical societies and of the Alumni Association of his University, member of the Council of the Southern Medical Association, member of its Executive Committee, and he has been Chairman of its Section on Surgery. Since 1942 he has been Chairman of the Fifth Service Command Committee of Procurement and Assignment Service for Physicians, Dentists, and Veterinarians. He is a member of the Board of Trustees of the American Medical Association.

He is a Baptist and a Democrat, a member of the Pendennis Club in Louisville, the Filson Club and Big Spring Golf Club.

Dr. Henderson's recreations are golf occasionally, the reading of mystery stories, the Kentucky Derby, where he always likes to entertain his friends, and attendance at medical meetings. He went to his first Southern Medical Association meeting in Lexington in 1913 and since establishing his practice following his return from World War I he has missed few meetings, none in the past twelve years.

Having been brought up in the country, he has never ceased to rise at daylight and work until dark. Punctuality, accuracy, loyalty to his friends, and integrity of purpose are his outstanding characteristics. He is said sometimes sternly to require the same characteristics of those who work with him, and on occasions to rebuke what he considers insincerity with the subtlety of a sledge hammer. Exceptional ability, industry, and systematic labor have brought him one of the largest surgical practices in Kentucky. His administration as President of the Southern Medical Association will be both effective and progressive.

MACROCYTIC ANEMIA

The *British Medical Journal*[1] has recently very ably reviewed the subject of macrocytic anemia, of which pernicious anemia, anemia of pellagra and sprue, and what is called nutritional macrocytic anemia, are types. They divide the nutritional anemias, according to Castle's hypothesis of extrinsic and intrinsic factors, into those due to a defect in the diet, and those due to indigestion. The two types may be difficult to distinguish, they note, since defective diets tend to produce indigestion.

They quote extensively work done by Spies and his associates[2 3] in Birmingham, Alabama. These investigators found macrocytic anemia to be relatively common in alcoholic pellagrins. They were able to detect free hydrochloric acid and also the intrinsic factor in patients with pellagra otherwise difficult to distinguish from pernicious anemia. The cases of pellagra in 1944 were treated with eight of the identified pure B vitamins, including nicotinic acid, without relief, though they responded promptly to treatment with a highly purified liver extract. Something apparently was required by them other than the B vitamins known at that time.

The British Empire, according to the editorial mentioned above, is the world's largest reservoir of nutritional macrocytic anemia, and should organize, as many groups in America have organized to discover a cheap remedy for this disease, to enhance the vigor of the Empire's tropical and subtropical populations. The first step, they suggest, would be to organize research centers where large numbers of such cases are available. Problems connected with this work, they say, have been delayed by the war and the impossibility of sending research teams overseas; but the war itself has shown how urgent is the problem of macrocytic anemia.

Meantime, the substance sought for the substandard populations of the Empire would appear to have been discovered in this country. The problem has been studied by Spies and his group over the last ten or more years. The November, December, and January numbers of the SOUTHERN MEDICAL JOURNAL[4] have described the accomplishment of the task. The discovery that folic acid is the effective substance in the treatment of pernicious anemia marks the culmination of an epoch in the study of this disease. Folic acid, a substance present in small amounts in liver, yeast, and other foods, produces a remarkable response of improvement in the blood picture in persons with addisonian anemia, nutritional macrocytic anemia, the macrocytic anemia of pregnancy, the macrocytic anemia of pellagra, and the macrocytic anemia of sprue.

The identification of the distinct clinical syndromes which accompany deficiency of each of the pure substances formerly studied in crude condition as part of the vitamin B group is a medical triumph of the past fifteen years equal to in importance, or greater than, that of blood stream antisepsis with the sulfonamides and the filtered antibiotics. The accomplishments of this generation in the two fields place modern medicine upon a dizzy height. They have been achieved by the work of many brilliant minds, each giving discoveries freely to the science of all countries.

In the field of logical differentiation of several human diseases Spies has made his greatest contribution. His outstanding work has been the selection of clinical signs characteristic of specific deficiencies, with criteria for effectiveness of specific therapy.

The clinical studies of Spies and his associates in the Hillman Hospital in Birmingham, particularly their discovery that nicotinic acid is specific in pellagra and folic acid in macrocytic anemia, are things of which the South may well be proud. They have demonstrated how close is the relationship between the field of hematology and that of nutrition; and how close are both to general clinical diagnosis and the medical specialties of gastro-enterology, dermatology, ophthalmology, and others.

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THE USE OF DRY MILK SOLIDS IN BREAD

The national wartime regulation requiring the enrichment of bread for the duration of the war and six months thereafter will soon be post-dated. In anticipation of this, the following states have enacted permanent legislation requiring the enrichment of bread and flour: Alabama, Arkansas, Georgia, Indiana, Kentucky, Louisiana, Maine, Mississippi, New Hampshire, New York, North Carolina, North Dakota, South Carolina, South Dakota, Texas, West Virginia, Washington and Wyoming. It is evident that the southern states have provided considerable leadership in this action.

The other fundamental step in the nutritional improvement of bread is that of the use of milk or milk products in its making. As these milk products become more available in the South, physicians will be asked more and more for their opinions regarding the value and use of milk products in bread. A number of excellent source materials on the subject are available.[1 2 3 4]

As far back as 1923, Professor E. V. McCollum said:

> "So far as we now know, the simplest, cheapest and most effective way to improve the quality of bread is to introduce more milk solids in its composition. This improvement of the bread supply is sound from the physiological, agricultural and economical standpoint, as well as being sound in that it does not run counter to our established dietary habits."[2]

American industry was the first to develop the use of milk products in the commercial production of bread. In other countries it is not customary to use much milk in bread making. That the addition of milk to bread considerably enhances its nutritive value is supported by a wealth of experimental evidence. Dry milk solids, preferred and commonly used by bakers, not only increase the quantity of protein in bread, but improve the quality of the protein in the mixture. They also increase the calcium, riboflavin and other essential nutrients in bread in direct proportion to the amount of milk used. In addition to increasing the nutrients in bread, the addition of milk increases its palatability. The crust of the loaf has a more agreeable color, the crumb has a softer texture, and the loaf tends to retain moisture and therefore to remain fresh longer. Toast made from bread which contains milk is considered to be superior in flavor to that made without milk. Experimentally, it has been shown that consumers prefer bread made with milk.

Under ordinary circumstances about 400,000 pounds of non-fat dry milk solids are produced annually. About half this amount is used by the baking industry, largely in bread making. Six parts of milk solids to every one hundred parts of flour in the formula has been the amount customarily used by the baking industry. Bread made with these proportions contains approximately the same amount of non-fat dry milk solids as it would if all the liquid in the dough were fresh non-fat milk.

Because of the tremendous amounts of non-fat dry milk solids shipped by Lend Lease, especially to England, the supply available to the baking industry during the war was greatly decreased. In order to conserve the supply of milk solids, in January, 1943, the amount which could be used in any baker's formula was limited to 3 per cent, but this amount was required for all pan breads. The Food and Nutrition Board of the National Research Council has repeatedly called attention to the desirability of the inclusion of more milk in bread from the nutritional point of view and the baking industry requested the government agencies to make more milk available at the earliest opportunity. Accordingly, in August, 1944, when an increased supply of roller process skim milk became available the restriction was lifted on the amount of milk solids permitted in bread making. By returning to the normal formula of 6 per cent of the weight of flour as non-fat dry milk solids the baker seldom has to add much riboflavin to meet the standards of this particular ingredient.

Fortunately it seems certain that the inclusion of milk in bread and bakery products by the baking industry is firmly established. Thus because of the widespread use of bakers' bread made with milk large numbers of our popula-

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tion are being benefited. There are, however, considerable numbers of persons, particularly those living in rural districts and in areas where hot breads are used extensively, who make their bread at home. Many of these persons do use fresh milk when it is available and if they can afford it. During the times when there are fresh milk shortages or when they cannot afford to buy fresh milk they are often deprived of the nutrients they would have if fresh milk were available for making their bread. Now that dry milk solids are obtainable for civilian use at a very reasonable cost they can be used for bread making in the home and will increase greatly the nutritive value of these products.

TWENTY-FIVE YEARS AGO

From Journals of 1921

Harrison Narcotic Laws.[1]—A bill has been introduced into each house of Congress * * * to relieve the United States from the odium of participation in the extension of the narcotic menace in other countries * * * This amendment includes provision that (1) no narcotics may be imported into the United States except such as are actually needed * * * for legitimate purposes. (2) No narcotics may be exported from the United States. (3) Foreign owned narcotics may not be shipped in bond through the United States * * * Early in 1914 the Harrison Narcotic Law was passed * * * Permits to export narcotics may be obtained * * * According to the evidence before Congress, the greater portion of narcotics imported into the United States are not used here but * * * are exported to Canada and Japan. The narcotics going to Canada are * * * smuggled back into this country * * * the narcotics sent to Japan are * * * smuggled into China * * * Although by the terms of peace at the close of the (opium) war, China was forced to permit the importation of opium, it has struggled steadfastly against opium and all its preparations. Later, because of the exorbitant price of the imported article, China itself began to produce opium * * * Today no opium or derivatives may be imported lawfully into China and no opium is produced there. About two years ago the last opium not contraband remaining in China was purchased by the Chinese Republic and publicly destroyed at a loss, it is alleged, of about thirty million dollars. Certainly it would seem to be the duty of the United States * * * to aid China in its fight against the narcotic evil.

Spread of Psychoanalysis.[2]—It appears that psychoanalysis hitherto cultivated by a certain number of medical practitioners and trained psychologists, has already become a fashionable craze and whatsoever of good there may be in it is in peril of meeting the fate that befell hypnotism many years ago. It was seized upon at an early stage by some novelists in search of a new plot * * * This kind of quack (psychoanalysis) has mushroomed of late in London and other cities * * * wonderful cures are promised. There must be possibilities of blackmail in this new phase of quackery.

1. Editorial. Harrison Narcotic Law. J.A.M.A., 76:114 (Jan.) 1921.

2. Editorial. British Med. J., p. 133, Jan. 22, 1921.

Book Reviews

Essentials of Histology. By Margaret M. Hoskins, Ph.D., and Gerrit Bevelander, Ph.D. Departments of Anatomy, The Graduate School of Arts and Science and College of Dentistry, New York University. 240 pages. 135 text illustrations, 2 color plates. St. Louis: The C. V. Mosby Company, 1945. Price $3.50.

"Essentials of Histology" is less than what the title promises; many essential points have been omitted. There is certainly not enough material for a medical student in the book. The text is clear, but too short and superficial. Expressions like ". . . the spleen is interposed in the blood vascular system to remove impurities from the blood" sound rather primitive. There are 135 illustrations; most of the specimens are taken from a variety of animals; relatively few are human tissues. Most of the illustrations are too schematic and diagrammatic.

To obtain satisfactory information on the subject, the reader of this book, even a beginner, would certainly have to consult larger reference works. Therefore it cannot be wholeheartedly recommended as a textbook for the student of medicine.

The Fundamentals of Electrocardiographic Interpretation. By J. Bailey Carter, M.D., F.A.C.P. Assistant (Rush) Professor, Department of Medicine, University of Illinois College of Medicine; Attending Staff, Cook County Hospital, Augustana Hospital, Chicago. Second edition. 406 pages. Illustrated. Springfield, Illinois: Charles C. Thomas, 1945.

The text covers the value of the electrocardiogram in clinical practice; the physiologic basis of electrocardiography; technic and artefacts; normal and abnormal waves and intervals, axis deviation and ventricular preponderance; the arrhythmias; the tachycardias; conduction disturbances; coronary disease and coronary occlusion; and graphic findings in various diseases. Illustrative tracings are abundant but at times their value is impaired either by small size and poor definition or by poor selection of graphs chosen to illustrate certain abnormalities. While adhering to fundamentals, the author cites diverse opinions in his treatment of controversial subjects and concludes each chapter with an extensive bibliography.

Dr. Carter properly emphasizes in his text that the

Continued on page 95

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The following is a complete roster of the officers of the Southern Medical Association for 1945-1946, and of associations meeting conjointly with the Southern Medical Association:

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SOUTHERN MEDICAL ASSOCIATION

Minutes of Thirty-Ninth Annual Meeting

Cincinnati, Ohio, November 12-15, 1945

The Southern Medical Association met in Cincinnati upon the invitation of the Campbell-Kenton County Medical Society of Kentucky. Covington and Newport are the principal cities of this two-county society and are across the river from Cincinnati. It was a Kentucky Meeting.

GENERAL PUBLIC SESSION

PRESIDENT'S NIGHT

Tuesday, November 13, 8:00 p. m.

The Association met in General Session at the Netherland Plaza Hotel, Pavillon Caprice, Cincinnati, and was called to order by Dr. Oscar W. Frickman, General Chairman for the Committee on Arrangements, Newport, Kentucky.

Patriotic songs were sung by the Assembly.

Rev. Charles D. Snowdon, Rector, Trinity Episcopal Church, Covington, Kentucky, delivered the invocation.

Dr. George N. Burger, President, Campbell-Kenton County Medical Society, Covington, Kentucky, delivered an Address of Welcome for the Society.

Dr. Oscar O. Miller, Immediate Past President, Kentucky State Medical Association, Louisville, Kentucky, delivered an Address of Welcome for the Association.

Dr. J. Warren White, Member of Council from South Carolina, Greenville, responded to the Addresses of Welcome for the Southern Medical Association.

The General Chairman, Dr. Oscar W. Frickman, then introduced the President of the Southern Medical Association, Dr. E. Vernon Mastin, St. Louis, Missouri, who presided for the remainder of the session.

Dr. E. Vernon Mastin, President, Southern Medical Association, St. Louis, Missouri, delivered his President's Address entitled "The Trend of Medicine Toward Socialization."

Dr. Roger I. Lee, President-Elect, American Medical Association, Boston, Massachusetts, delivered an address entitled "The Changing Use of Hospitals by the Medical Profession."

Dr. Wallace H. Graham, Colonel, Medical Corps, AUS, Physician to President Truman, Washington, D. C., delivered an address entitled "Reconversion of the Doctor from War to Peace."

The Southern Medical Association's Research Medal was presented to Dr. Tinsley R. Harrison, Professor of Medicine and Dean of the Faculty, Southwestern Foundation Medical College, Dallas, Tex., "in recognition of his outstanding contributions toward the elucidation of structural and functional aspects of cardiovascular disease and particularly of practical problems arising from failure of the circulation," the presentation being made by the President, Dr. Mastin.

The President, Dr. Mastin, called for the Report of the Council. Upon motion of Dr. Oscar B. Hunter, Washington, D. C., duly seconded and carried without a dissenting vote, the Report of the Council, as prepared by the Chairman and to be published in full in the proceedings of this meeting, was approved without being read.

REPORT OF COUNCIL

Dr. Walter C. Jones, Miami, Florida, Chairman of the Council, presents the following report for the Council:

To the Members of the Southern Medical Association—

The Council convened in two sessions at the Netherland Plaza Hotel, Parlor I, in Cincinnati, on Monday and Tuesday, November 12 and 13, 1945. Present: Dr. Walter C. Jones, Chairman, Miami, Florida; Dr. Harvey B. Searcy, Tuscaloosa, Alabama; Dr. Oliver C. Melson, Little Rock, Arkansas; Dr. Arnold McNitt, Washington, D. C.; Dr. W. A. Selman, Atlanta, Georgia; Dr. J. B. Lukins, Louisville, Kentucky; Dr. Wiley R. Buffington, New Orleans, Louisiana; Dr. W. Raymond McKenzie, Baltimore, Maryland; Dr. J. P. Culpepper, Jr., Hattiesburg, Mississippi; Dr. Neil S. Moore, St. Louis, Missouri; Dr. William M. Coppridge, Durham, North Carolina; Dr. Carroll M. Pounders, Oklahoma City, Oklahoma; Dr. J. Warren White, Greenville, South Carolina; Dr. Kate Savage Zerfoss, Nashville, Tennessee; Dr. Curtice Rosser, Dallas, Texas; Dr. Thomas W. Murrell, Richmond, Virginia; and Dr. Ray M. Bobbitt, Huntington, West Virginia. Sitting with the Council: Dr. E. Vernon Mastin, President, St. Louis, Missouri; Dr. M. Y. Dabney, President-Elect, Birmingham, Alabama; Dr. William C. Thomas, Councilor-Elect from Florida, Gainesville; Dr. W. L. Pressly, Councilor-Elect from South Carolina, Due West; Dr. Walter G. Stuck, Councilor-Elect from Texas, San Antonio; Dr. T. Dewey Davis, Councilor-Elect from Virginia, Richmond; and Mr. C. P. Loranz, Secretary-Manager, Birmingham, Alabama.

The Council was called to order by the Chairman, who presided.

Dr. W. A. Selman, Councilor from Georgia, Atlanta, presented a resolution on Dr. Edgar Garrison Ballenger, President of the Southern Medical Association, Atlanta, Georgia, who died June 1, 1945:

Dr. Edgar Garrison Ballenger, President of the Southern Medical Association, passed away in his home city, Atlanta, Georgia, on June 1, 1945. North Carolina was his native state. He was born November 20, 1877. His father, Thomas Theodore Ballenger, was a distinguished citizen of Polk County, North Carolina, and represented his county in the State Senate for many years. His mother was Ann Garrison also a native of North Carolina. Dr. Ballenger received his early education from Furman University, and the University of North Carolina. He attended the University of Maryland for his medical education from which institution he was graduated in 1901.

On April 20, 1904, he was married to Miss Nora Clark Gorman of Maryland. They had two children, Edgar Garrison, Jr., and Mary Clark Ballenger. He also had two grandchildren from the marriage of his daughter to Mr. C. M. Foster.

Dr. Ballenger's medical record is long and impressive. After graduation he served an internship in Baltimore City Hospital. In 1904 he began practice in Atlanta, and soon gave special attention to urology. Since then his record

has been one success after another until he was known as one of the leading urologists of the country.

He served as President of the Fulton County Medical Society in 1911, was a member of the House of Delegates of the American Medical Association in 1912; President of the Southeastern Section of the American Urological Association in 1934, and President of the Association in 1938. He was the first President of the Southeastern Surgical Congress, 1930, was a fellow of the American College of Surgeons, and was a Diplomate of the American Board of Urology.

During the first World War he served in France with the rank of Captain, with the Emory Base Hospital Unit. Later he was promoted to Major.

He was author of numerous medical articles and two textbooks on urology. At the time of his death Dr. Ballenger was President of the Southern Medical Association.

Whereas, the Southern Medical Association has lost a distinguished President, and the profession at large an eminent physician, the South and the Nation a distinguished citizen, therefore,

Be it resolved, that these resolutions be spread upon the minutes of this Association, and that a copy be mailed to the family.

Dr. J. Warren White, Councilor from South Carolina, Greenville, presented a resolution on Dr. James Wilkinson Jervey, Past President of the Southern Medical Association, Greenville, South Carolina, who died November 1, 1945:

In the death of Dr. James Wilkinson Jervey on November 1, 1945, the Southern Medical Association has lost one of its Past Presidents and one of its most distinguished members. Until the last few years he had always been an active member and served this Association loyally and well in many capacities and on many occasions. That his ability and personal charm were recognized widely is attested by the large number of high offices held in scientific organizations.

Dr. Jervey was born in Charleston, South Carolina, on October 19, 1874. He attended the University of South Carolina and then the Medical College of the State of South Carolina, receiving his M. D. degree in 1897. From the beginning of his medical career, he was interested in eye, ear, nose and throat. His first graduate work was in this field and at the New York Eye Infirmary. He located in Greenville, South Carolina, in 1898, and continued his private practice there throughout his professional life.

He did graduate study in Europe in 1908 and again in 1913.

Dr. Jervey was a Diplomate of the American Board of Ophthalmology and of the American Board of Otology and Laryngology. He was President of the South Carolina Medical Association in 1912-13. He was President of the American Laryngo-Rhino-Otological Association in 1933-1934. He served as Secretary-Editor of the South Carolina Medical Association Journal in its younger days.

He is survived by his son, Dr. J. W. Jervey, Jr., of Greenville, South Carolina, this year's Chairman of the Section on Ophthalmology and Otolaryngology, a daughter, Mrs. Addison Ingle, of Charleston, and his wife, Mrs. J. W. Jervey, Sr., of Greenville.

An individualist and man of many interests who believed in and worked for the medical profession, Dr. Jervey will be long remembered and missed by his many friends.

Whereas, our organization has lost a conspicuous Past President and medicine as a whole a distinguished representative and his state a distinguished citizen, therefore,

Be it resolved, that a page of the minutes of this Association be dedicated to his memory and that a copy be mailed to his family.

These two resolutions were adopted by a rising vote, the Council standing for a time with bowed heads in memory of Dr. Ballenger and Dr. Jervey.

The Council expressed to Dr. Oliver C. Meison, Councilor from Arkansas, Little Rock, sympathy in the loss of his wife.

The Chairman called for the Report of the Executive Committee.

Dr. Curtice Rosser, Dallas, Texas, Chairman of the Executive Committee of the Council, reported for the Committee as follows:

REPORT OF EXECUTIVE COMMITTEE

To the Members of the Council—

Gentlemen:

As Chairman of your Executive Committee I wish to submit the following report for the Committee:

In compliance with a very wise policy of the Committee that it meet in the home office city every other year, the Executive Committee of the Council met at Birmingham, Monday, May 21, 1945. Present: Dr. J. B. Lukins, Louisville, Kentucky; Dr. M. Y. Dabney, Birmingham, Alabama; and Dr. Curtice Rosser, Dallas, Texas. Sitting with the Committee by invitation of the Chairman: Dr. Walter C. Jones, Chairman of the Council, Miami, Florida; Dr. Walter E. Vest, Chairman of the Board of Trustees, Huntington, West Virginia; Dr. Harvey B. Searcy, Member of the Council from Alabama, Tuscaloosa, Alabama; Dr. Oscar B. Hunter, immediate Past Chairman of the Executive Committee, Washington, D. C.; and Mr. C. P. Loranz, Secretary-Manager, Birmingham, Alabama. Dr. Neil S. Moore, St. Louis, Missouri, and Dr. Edgar G. Ballenger, President, Atlanta, Georgia, members of the Committee, and Dr. Lucien A. LeDoux, next immediate Past Chairman of the Committee, New Orleans, Louisiana, invited by the Chairman to sit with the Committee, were prevented from attending. The Secretary-Manager was instructed to send a telegram to each of them expressing the regret of the Committee at their not being able to attend the meeting.

The Executive Committee convened at 10:00 a. m. at the Tutwiler Hotel, Birmingham, and concluded its business by lunch time. Two items were referred to the Committee from the Council at the St. Louis meeting: (1) The invitation from the Campbell-Kenton County Medical Society to hold the 1945 meeting under their sponsorship, using the hotels of Cincinnati; and (2) the determining of whether or not a meeting would be held in 1945, where the meeting would be held, and to develop program plans for such a meeting.

After careful consideration the Committee accepted the invitation of the Campbell-Kenton County Medical Society of Kentucky to hold the 1945 meeting under their sponsorship, using hotels of Cincinnati, if the government lifted the ban on conventions or permission could be secured from the Office of Defense Transportation for a meeting to be held.

It was decided that the meeting should be held at the usual time, either the second or third week of November. The Council by mail vote favored the second week, November 12-15.

In view of the fact that the war was still on, and even if over before the meeting, it was thought best to streamline the scientific activities. It was decided to give one full session to each of the twenty-one sections, each section program to have six or seven papers including the chairman's address. It was thought wise, and the Committee so decided, to so stagger these twenty-one section meetings that there would be only three sections meeting at the same time. To do this it was decided to begin the section meetings on Monday afternoon and run them through Thursday afternoon. It was decided to have the usual general session on Tuesday evening and an additional general session on Wednesday evening, and to have no general clinical sessions this time by the local profession. It was decided that the sections could have a discussion or a question and answer period following the presentation of each paper, the papers to be twenty minutes with ten minutes for either formal discussion or questions and answers, thirty-minute periods.

Since these were war times it was thought advisable to restrict the meeting to scientific activities, to omit all social and semi-social activities, which would include the meeting of the Woman's Auxiliary, the President's reception and ball, alumni dinners and fraternity luncheons and the golf and trapshooting tournaments.

The Committee authorized the extending of an invitation to attend as guests the white physicians of Ohio and Indiana who were members of their state medical society. The question of using the words "white physicians" in connection with promotion for the meeting and in the preliminary and official programs was very thoroughly discussed. The Committee authorized the Association management to continue to use, as in the past, the words "white physicians," the Cincinnati meeting to be available only to white physicians.

The Executive Committee named a special committee to present the claims of the Southern Medical Association to the Office of Defense Transportation for the Southern Medical Association to have a regular meeting, the committee to be composed of Dr. Oscar B. Hunter, immediate Past Chairman of the Executive Committee of the Council, Washington, D. C.; Dr. James S. Simmons, Brigadier General, Medical Corps, U. S. Army, Washington, D. C.; and Mr. C. P. Loranz, Secretary-Manager, Southern Medical Association, Birmingham. This committee met with Mr. J. Monroe Johnson, Director of Office of Defense Transportation, in his office in Washington, on Tuesday, September 4, and filed with him a formal application for permission to hold a meeting. While no permission was given or definite assurance made that permission would be given, the Committee felt from their conversation with Mr. Johnson that there would be a modification of ODT ruling made in time to have a meeting. It will be recalled that the ban was lifted on conventions on September 11, just one week after the Committee conferred with Mr. Johnson.

In the event that the ban on conventions should not be lifted and/or permission not granted for a regular meeting, it was decided to have, within the travel limits of ODT, a meeting in New Orleans at the Roosevelt Hotel the second week of November. There would be a regular meeting of the Council and of the Board of Trustees, a general scientific session on Tuesday afternoon, and a general session Tuesday night, these two sessions being advertised primarily to the New Orleans profession. Such a meeting would satisfy the Constitution and By-Laws as to an annual meeting.

The Executive Committee extended an invitation to the American Therapeutic Society to hold its annual meeting conjointly with the Southern Medical Association at Cincinnati, if such a meeting could be held.

The Committee discussed the advisability of providing for Life Memberships. The Secretary-Manager was requested to give this matter consideration and submit to the Committee a plan for Life Memberships.

The Executive Committee was privileged to have appear before it Mr. Frank M. Rhatigan (W. A. Baum Company), New York, New York, and Mr. Charles H. Yocum (Becton, Dickinson and Company), Rutherford, New Jersey, President and Secretary respectively of the Medical Exhibitors Association. These gentlemen outlined to the Committee the purpose of their organization, made it clear it was the desire of their organization to cooperate closely with all medical organizations, and to do what they could in cooperation with the management of medical associations to make medical meetings more profitable both to physicians and to business firms. They brought three specific requests from the Board of Directors of their Association: (1) that there be a Committee on Planning from the Medical Exhibitors Association; (2) that there be an intermission in the middle of each of the forenoon and afternoon sessions; and (3) that the opening time be made 8:30 a. m. instead of 8:00 a. m. and the closing time be 5:30 p. m. instead of 6:00 p. m. In the discussion it was made clear by these gentlemen that there was no desire on the part of the Medical Exhibitors Association to dictate to the Southern Medical Association or its management through a Committee on Planning, that the Committee on Planning would be only advisory to the Association management in the formulating of plans for a technical exhibit that would be to the best interest of the physicians and exhibitors, and that the Association or its management would be under no obligation to adopt any plans or suggestion that might be made by the said Committee on Planning. The Executive Committee appreciated the privilege of having Mr. Rhatigan and Mr. Yocum present the work of their Association. When these gentlemen retired it was moved and carried unanimously that the requests made by the Medical Exhibitors Association be referred to the Secretary-Manager for such action as he deemed wise to take, the Executive Committee approving any action that he might take in this matter.

The offices of the Association in the Empire Building were visited and inspected by the Committee. The Secretary-Manager and his efficient staff have a busy workshop occupying only a moderate amount of space and this space is utilized with well arranged desks, files, bookshelves and mechanical accessories requisite to turning out the large volume of material which must constantly leave this office. The Committee feels that the Association is to be congratulated on its enthusiastic and effective home office organization.

In honor of the Committee, the Southern Medical Association was host to a small group of officers and members of the Association with their wives for luncheon; was host to a dinner that evening to the members of the Southern Medical Association in Jefferson County (Birmingham); and host to a smoker to the Jefferson County Medical Society following a scientific program on that evening. Two of those in attendance upon the Committee meeting, Dr. Curtice Rosser and Dr. Oscar B. Hunter, gave the program for the regular meeting of the Jefferson County Medical Society that Tuesday evening, a Southern Medical Association Night, Dr. Hughes Kennedy, President, presiding. Dr. Tom D. Spies, Nutritional Clinic, Hillman Hospital, gave a clinic in the afternoon for the members of the Committee.

After the ban was lifted on conventions, the war being over and a regular meeting could be held, the Executive Committee by mail vote modified its action regarding the Woman's Auxiliary meeting and social activities. It decided that the Woman's Auxiliary could have their meeting, if they desired, and to have the President's reception and ball following the Tuesday evening session.

At the request of Mrs. John Pierpont Helmick, President of the Woman's Auxiliary to the Southern Medical Association, Fairmont, West Virginia, the Executive Committee (Dr. Moore, Dr. Lukins and Dr. Rosser), which is the Advisory Committee to the Auxiliary, met this morning with Mrs. Helmick and Mrs. W. W. Potter, President-Elect, Concord, Tennessee. Mrs. Helmick and Mrs. Potter wished to know if there was something the Auxiliary could do for the Association. They outlined certain projects which the Auxiliary has had for some time, all of which the Committee was in full accord. They wished to have the reaction of the Committee as to what would be the best form for their Jane Todd Crawford Memorial to take. They reported that the fund now was in excess of eighteen hundred dollars and they expected it to be considerably larger. While the Executive Committee felt that the Auxiliary should determine what form this memorial should take, the Committee expressed it as their judgment that it should be a living memorial, perhaps a loan fund to help medical students or physicians from the South desiring to do post-graduate work in gynecology.

Respectfully submitted.

(Signed) CURTICE ROSSER, *Chairman.*

Cincinnati, November 12, 1945.

The Report of the Chairman of the Executive Committee, giving the actions of the Committee, was unanimously approved by the Council.

The Chairman, Dr. Jones, announced the Committee to judge the Scientific Exhibits: Dr. Thomas W. Murrell, Chairman, Richmond, Virginia; Dr. Grace A. Goldsmith, New Orleans, Louisiana; Dr. R. J. Wilkinson, Huntington, West Virginia; Dr. Roger D. Baker, Birmingham, Alabama; and Dr. Vincent W. Archer, Charlottesville, Virginia.

At the Council meeting on Tuesday the Report of the Board of Trustees, incorporating the Report of the Secretary-Manager, was read and approved. The Council joined with the Trustees in extending thanks and appreciation to Mr. Loranz for the splendid way he had managed the Association affairs this past year.

REPORT OF TRUSTEES

To the Council of the Southern Medical Association:

The Trustees of the Southern Medical Association met at the Netherland Plaza Hotel, Room 2314, Cincinnati, Ohio, Monday, November 12, at 6:00 p. m. Present: Dr. Walter E. Vest, Chairman, Huntington, West Virginia; Dr. Irvin Abell, Sr., Louisville, Kentucky; Dr. Paul H. Ringer, Asheville, North Carolina; Dr. M. Pinson Neal, Columbia, Missouri; Dr. Harvey F. Garrison, Jackson, Mississippi; and Dr. James A. Ryan, Covington, Kentucky.

The Secretary-Manager, Mr. C. P. Loranz, presented his report for the fiscal year ending October 31, 1945. The report was approved as presented and Mr. Loranz was extended the thanks and appreciation of the Board for the splendid way he had managed the Association affairs this past year. The report is here transmitted to the Council.

There being no further business the Trustees adjourned.

(Signed) WALTER E. VEST, *Chairman*

REPORT OF SECRETARY-MANAGER

A detailed financial statement for the fiscal year ending October 31, 1945, is here given and is self-explanatory. It will be noted that the net profit for the year is $18,640.60.

BALANCE SHEET

Balance Sheet, Southern Medical Association, Fiscal Year Ending October 31, 1945 (November 1, 1944, to October 31, 1945)

	Debits	*Credits*
Surplus		$ 58,549.73
U. S. Government Bonds	$ 60,126.40	
Air Lines Travel Fund	431.21	
Paper Stock (print paper on hand)	2,076.40	
Furniture and Fixtures	3,219.60	
Profit and Loss	341.49	
Depreciation		1,269.11
Revenue		
Advertising	$ 40,795.63	
Dues	23,521.55	
Subscriptions	2,331.75	
Reprints	179.05	
Exhibits	27,245.00	
Interest on Bonds and Sav.	375.00	
Paper Stock Profit	405.97—	94,853.95
Expenses		
Publishing	$ 20,327.76	
Cuts and Electros	1,456.24	
Journal Wrappers	1,036.63	
Second Class Postage	1,050.00	
Office Postage	2,379.00	
Salary	24,328.20	
Interest and Discount	48.70	
Section Stenographers	1,202.60	
Stationery and Printing	2,520.28	
Office Supplies and Expense	716.03	
Telephone and Telegraph	326.08	
Office Rent	2,600.00	
Subscription Commissions	19.00	
Advertising Expense	237.00	
Addressograph Expense	40.30	
Traveling Expense	1,783.56	
Expense at St. Louis	13,699.37	
Banking Expense	11.55	
Section Secretaries' Expense	85.75	
Woman's Auxiliary	250.00	
General Expense	1,753.21	
Income Tax	.60—$ 75,871.86	
Accounts Receivable (owe us)	2,129.25	
Accounts Payable (we owe)		359.40
Cash	10,835.98	
	$155,032.19	$155,032.19

SUMMARY OF EARNINGS

Revenue Accounts	$ 94,853.95
Expense Accounts	75,871.86
Gross Profit	18,982.09
Less Profit and Loss	341.49
Net Profit for Year Ending October 31, 1945	$ 18,640.60

SURPLUS ACCOUNT

Surplus October 31, 1944	$ 58,549.73
Net Profit for Year Ending October 31, 1945	18,640.60
Surplus October 31, 1945	$ 77,190.33

STATEMENT OF ASSETS AND LIABILITIES

October 31, 1945

Assets

U. S. Government Bonds	$ 60,126.40
Air Lines Travel Fund (deposit)	431.21
Paper Stock (print paper on hand)	2,076.40
Furniture and Fixtures (net—less depreciation)	1,950.49
Accounts Receivable (owe us)	2,129.25
Cash	10,835.98
	$ 77,549.73

Liabilities

Surplus	$ 77,190.73
Accounts Payable (we owe)	359.40
	$ 77,549.73

The cash on hand in bank as shown by the cash book is $10,835.98.

Included in the assets of the Association are registered United States Government Bonds, purchase value $60,126.40. Of these there are Treasury Bonds, for which we paid $9,831.40, par value $10,000.00, due 1946/1956, yielding 3¾ per cent interest; and United States Savings Bonds, for which we paid $50,295.00, payable in ten years, yielding approximately 2.9 per cent per year for the ten-year period. We reported last year United States Government Bonds to the amount of $44,216.40. It will be seen that we have purchased this year bonds to the amount of $15,910.00. We felt that during wartimes we should put as much of our funds in bonds as we could and maintain an adequate operating balance.

The books of the Association are being audited by Francis B. Latady & Company, Certified Public Accountants.

Last year we reported 6,641 members, and during the year we received 352 new members. The losses from resignations, deaths and suspensions were 314, leaving a net membership at this time of 6,679, or a net gain for the year of 38. There are 512 members of the Association in the Armed Forces, who, according to the Council action, are being carried on the roster as members without the payment of dues. A comparative statement of membership for the past eight years accompanies this report.

As your Secretary, Treasurer and General Manager, carrying the title of Secretary-Manager, I have endeavored this year, as I have in past years, to conduct your affairs in a satisfactory manner, trying at all times to be faithful and efficient. I have tried to be as economical as possible and to carry on the Association activities at the lowest cost without curtailing any more than possible the size of the JOURNAL each month and other Association activities.

I wish to express my appreciation for the cooperation of the President, Dr. Edgar G. Ballenger, before his death and of his successor, Dr. E. Vernon Mastin, and all other officers, general and of the sections, and the Editor, Dr. M. Y. Dabney, and Associate Editor, Mrs. Dabney, and all those working with me at headquarters, as well as the General Chairman for the Cincinnati meeting, Dr. Oscar W. Frickman, and those working with him. I appreciate their help and cooperation.

(Signed) C. P. LORANZ, *Secretary-Manager.*

REPORT OF AUDITOR

To the Southern Medical Association:

We have audited the books and accounts of the Southern Medical Association for the fiscal year ending October 31, 1945, and

WE HEREBY CERTIFY that in our opinion the Trial Balance, Summary of Earnings, Surplus Account and Statement of Assets and Liabilities, which are hereto attached,

MEMBERS BY STATES

The following is a comparative statement of membership of the Southern Medical Association for the past seven years:

	1939	1940	1941	1942	1943	1944	1945
Alabama	426	427	434	407	390	398	416
Arkansas	246	303	295	248	226	212	219
District of Columbia	164	172	163	150	163	163	170
Florida	374	375	374	373	362	323	316
Georgia	548	535	530	491	435	400	449
Kentucky	359	527	591	509	440	428	437
Louisiana	544	489	474	438	420	395	386
Maryland	412	393	381	354	343	335	332
Mississippi	372	380	360	310	299	262	251
Missouri	462	522	703	642	558	559	627
North Carolina	375	369	368	371	396	389	383
Oklahoma	744	662	461	384	338	314	305
South Carolina	198	187	206	199	205	207	191
Tennessee	474	602	575	482	448	423	415
Texas	1036	956	956	861	800	735	738
Virginia	411	393	383	381	455	429	428
West Virginia	246	244	234	211	216	232	234
Other States and Foreign	72	70	89	181	353	437	382
Totals	7463	7606	7577	7083	6847	6641	6679

correctly set forth the condition of the Southern Medical Association as at October 31, 1945, and the results of its operations for the fiscal year ending on that date.

The reserve of United States Government Bonds, at cost, amounted on the balance sheet date to $60,126.40, and has been increased during the year under examination by the further investment of $15,910.00. The bonds in this reserve were examined by us, in the presence of your Secretary-Manager, Mr. C. P. Loranz, and were found to be in proper order in every respect.

Your books and records have been kept up to the usual high standard, although staff shortages due to war conditions have continued. We have received from your management and office force the same co-operation as in the past, in the performance of this engagement.

(Signed) FRANCIS B. LATADY & Co.,
Certified Public Accountants,
By FRANCIS B. LATADY, C. P. A.

Birmingham, Alabama, December 7, 1945.

The suggestion of the American Academy of Tropical Medicine, meeting conjointly with the Southern Medical Association, for holding an International Congress on Tropical Medicine and Malaria, to be sponsored by the State Department, was presented to the Council. Here follows a resolution adopted by the Council:

Whereas, the exigencies of recent years have intensified research on problems in the field of tropical medicine, resulting in numerous and significant discoveries which materially contributed to the success of our military operations in foreign theaters, and

Whereas, since the general interest in tropical medicine is more widespread than at any time in the past, and the medical profession is keenly aware of these problems which become more pressing because of the phenomenal growth of international air travel, and

Whereas, it is important that information of these discoveries be brought to the world in order that with the return of peace the benefits of this knowledge may be made available to promote the well-being of the people of the world, and

Whereas, an international reunion of those who have contributed to these advances with others who may be qualified to disseminate their benefits is the most effective measure to generally diffuse this knowledge, and since such an international gathering of scientists will materially contribute to the better international understanding and cooperation so essential to an enduring peace, therefore,

Be it resolved, that the Southern Medical Association heartily endorse the proposal of the American Academy of Tropical Medicine that an international congress on tropical medicine and malaria be held in the United States at an early date, and that the Southern Medical Association join with the American Academy of Tropical Medicine, in petitioning the State Department of the United States government to officially sponsor, and invite international participation in such a gathering at as early a date as is regarded as opportune, and direct the Secretary of the American Academy of Tropical Medicine to formally advise the State Department of this endorsement, and

Be it further resolved, that the President of the Southern Medical Association is authorized and empowered to appoint a member of the Southern Medical Association to represent the said Association on a committee composed of duly authorized and appointed representatives of the American Academy of Tropical Medicine, American Society of Tropical Medicine, National Malaria Society, American Society of Parasitologists, Southern Medical Association, American Medical Association, American College of Physicians, American Association for the Advancement of Science, and the Section on Medical Science of the National Research Council, to meet on call from the President of the American Academy of Tropical Medicine, for organization, and in their organized capacity to assist the State Department in developing, promoting and holding such a congress, and the Southern Medical Association will further give all practicable support to the realization of this project.

The Council confirmed a vote by mail, changing the name of the Section on Anesthesia to Section on Anesthesiology, this being done at the request of the officers of this Section and a large number of members practicing anesthesia.

The Council confirmed a vote by mail, approving the recommendation of the Research Medal Committee that the Research Medal this year be given to Dr. Tinsley R. Harrison, Professor of Medicine and Dean of the Faculty, Southwestern Foundation Medical College, Dallas, Texas, "in recognition of his outstanding contributions toward the elucidation of structural and functional aspects of cardiovascular disease and particularly of practical problems arising from failure of the circulation."

The Council confirmed a vote by mail, making all activities at the Cincinnati meeting strictly informal.

The Council at the meeting last year recommended that Article 6, Section 10 of the Constitution be amended to read: "The officers of the Association shall be a President, President-Elect, First Vice-President, Second Vice-President, a Board of Trustees, a Secretary, Treasurer and General Manager (any two or all three of which may be combined at the discretion of the Council with the approval of the Association, and where all three are combined, the office shall carry the title of Secretary-Manager), an Editor of the Journal, and a Council composed of one member from each state or district in the Association." This was presented to the Association at the General Session in the Report of the Council last year to be laid on the table for one year. It is now presented to the Association in this Report of the Council and favorable action on this report makes this amendment a part of the Constitution.

The Council charged its Executive Committee with the responsibility of determining where the meeting next year (1946) would be held and to develop program plans for such a meeting, this to be done at the meeting of the Executive Committee in the spring of 1946.

Dr. W. R. Buffington, Councilor from Louisiana, New Orleans, read a telegram from the Orleans Parish Medical Society, extending an invitation for the Southern Medical Association to meet in New Orleans in 1946. This invitation was referred to the Executive Committee.

The Council, speaking for the Association, expresses to the Campbell-Kenton County Medical Society of Kentucky, the Kentucky State Medical Association, the hotels and the press of Cincinnati, and to all others who have contributed to the success of the meeting their sincere appreciation for the hospitality extended. Those who were in attendance have enjoyed the sincere hospitality of the profession from the host society and feel that a great measure of credit for the success of the meeting is due to the interest manifested by the profession and by the citizens of Campbell and Kenton Counties, Kentucky.

The Council proceeded to the election of three Trustees for a term of two years each, the terms of Dr. Walter E. Vest, Dr. Paul H. Ringer and Dr. Harvey F. Garrison expiring with this meeting. According to precedent, Dr. Vest, oldest member in point of service, was retired, Dr. Ringer and Dr. Garrison were re-elected and the outgoing President, Dr. E. Vernon Mastin, was elected in place of Dr. Vest.

The Council elected Dr. J. P. Culpepper, Jr., Hattiesburg, Mississippi, a member of the Executive Committee for a term of three years to succeed Dr. Curtice Rosser whose term expires with this meeting.

The Council elected Dr. Neil S. Moore, St. Louis, Missouri, Chairman of the Executive Committee.

The Council elected Dr. W. Raymond McKenzie, Baltimore, Maryland, its Chairman for next year.

The Council adjourned as an executive body to meet at the regular meeting in 1946.

(Signed) WALTER C. JONES, *Chairman.*

The President, Dr. Mastin, then called for the Report of the Nominating Committee.

REPORT OF NOMINATING COMMITTEE

Dr. Walter C. Jones, Miami, Florida, Chairman of the Nominating Committee, presented the Report of the Committee:

The Council, as your Nominating Committee, presents for your consideration the following:

For President-Elect: Dr. E. L. Henderson, Louisville, Kentucky.

For First Vice-President: Dr. Lucien A. LeDoux, New Orleans, Louisiana.

For Second Vice-President: Dr. Oscar W. Frickman, Newport, Kentucky.

The Secretary, Treasurer and General Manager, carrying the title of Secretary-Manager, Mr. C. P. Loranz, Birmingham, Alabama, was elected three years ago for a term of five years.

The Editor, Dr. M. Y. Dabney, and Associate Editor, Mrs. Eugenia B. Dabney, Birmingham, Alabama, were elected two years ago for a term of three years.

(Signed) WALTER C. JONES, *Chairman.*

It was moved that the Report of the Nominating Committee be adopted and the Secretary instructed to cast a unanimous vote for the nominees, the motion being duly seconded and carried without a dissenting vote. The Secretary then cast the unanimous vote for the nominees, and the President, Dr. Mastin, declared the nominees duly elected.

Dr. M. Y. Dabney, Birmingham, Alabama, President-Elect and incoming President, was presented by the President, Dr. Mastin, and duly installed President of the Southern Medical Association, effective at the close of this annual meeting.

Dr. Walter C. Jones, Chairman of the Council, presented a Past-President's Medal posthumously to Dr. Edgar Garrison Ballenger, Atlanta, Georgia, and to Dr. E. Vernon Mastin, St. Louis, Missouri. The Medal for Dr. Ballenger was received for his family by his associate, Dr. Harold P. McDonald, Atlanta, Georgia.

After announcements, the General Session adjourned, and with the completion of the programs on Wednesday and Thursday, the 1945 session of the Association adjourned.

Immediately following this General Session there was a President's Reception and Ball in the Hall of Mirrors, Netherland Plaza Hotel.

GENERAL SESSION

Wednesday, November 14, 8:00 p. m.

A General Session was held at the Netherland Plaza Hotel, Pavillon Caprice, Cincinnati, and was called to order by the President, Dr. E. Vernon Mastin, St. Louis, Missouri, who presided.

Dr. Tinsley R. Harrison, Professor of Medicine and Dean of the Faculty, Southwestern Foundation Medical College, Dallas, Texas, delivered an address entitled "Types of Circulatory Failure" (Lantern Slides).

Sir Jack C. Drummond, Scientific Adviser to the Ministry of Food of Great Britain, London, England, delivered an address entitled "Food and Health in Great Britain During War" (Lantern Slides).

Dr. Howard A. Rusk, Consultant in Physical Rehabilitation, Baruch Committee on Physical Medicine, New York, New York, and Instructor in Medicine, Washington University School of Medicine, St. Louis, Missouri, delivered an address entitled "Rehabilitation, the Third Phase of Medical Care."

Dr. George F. Lull, Major General, Medical Corps, U. S. Army, The Deputy Surgeon General, Washington, D. C., delivered an address entitled "Demobilization of the Medical Department."

Dr. Alphonse McMahon, Commodore, Medical Corps, USNR, Bureau of Medicine and Surgery, U. S. Navy Department, Washington, D. C., delivered an address entitled "Post-War Plan for Training Naval Medical Officers.

The General Session then adjourned.

SCIENTIFIC AWARDS

The Committee on Scientific Awards presented the following report:

Your Committee on Scientific Awards visited the scientific exhibits and, after studying the exhibits, makes the following report:

First award to John Adriani and Ray T. Parmley, Louisiana State University School of Medicine and Charity Hospital, New Orleans, Louisiana, for their exhibit on saddle block anesthesia.

Second award to Clarence E. Gardner, Arthur James and Will C. Sealy, Duke University School of Medicine, Durham, North Carolina, for their exhibit on chest injuries.

Honorable mention to—

U. S. Navy, Bureau of Medicine and Surgery and Naval Medical School, Washington, D. C., for the exhibit on audio visual aids in medicine, plastic prostheses, sulfa fast strepa, penicillin in syphilis, and the story of whole blood.

U. S. Public Health Service, Malaria Control in War Areas, Atlanta, Georgia, and National Institute of Health, Bethesda, Maryland, for the exhibit on schistosomiasis.

(Signed) THOMAS W. MURRELL, *Chairman,*
GRACE A. GOLDSMITH,
R. J. WILKINSON,
ROGER D. BAKER,
VINCENT W. ARCHER,
Committee.

The Committee on Scientific Awards consists each year of five Association members, one from the Section on Medicine, one from the Section on Surgery, one from the Section on Pathology, and the other two to be selected from other sections. One member of the Committee is to be a member of the Council and is to be Chairman of the Committee. The Committee is appointed by the Chairman of the Council.

WOMEN PHYSICIANS

The Thirty-First Annual Meeting and Dinner for Women Physicians of the Southern Medical Association was held at Cincinnati, Netherland Plaza Hotel, Parlors E-F, Tuesday, November 13, at 6:00 p.m. Dr. Margaret M. Nicholson, Washington, D. C., Chairman of Women Physicians of the Southern Medical Association, presided.

Dr. Carroll C. L. Birch, Assistant Professor of Medicine, University of Illinois College of Medicine, Chicago, gave the Address of the evening.

Dr. Ruth G. Aleman, New Orleans, Louisiana, was elected Chairman, and Dr. Estelle A. Magiera, Jackson, Mississippi, was elected Vice-Chairman.

There were 39 women physicians present at this annual meeting and dinner.

Dr. Dorothy B. Worcester, Covington, Kentucky, was Chairman of the Committee for Women Physicians from the host society, the Campbell-Kenton County Medical Society of Kentucky.

REGISTRATION

Cincinnati Meeting, Southern Medical Association
November 12-15, 1945

	Number Physicians	Number Ladies Accompanying Physicians
Alabama	75	29
Arkansas	8	—
District of Columbia	36	8
Florida	23	3
Georgia	54	17
Kentucky	201	82
Louisiana	24	10
Maryland	29	11
Mississippi	22	15
Missouri	59	23
North Carolina	72	18
Oklahoma	30	13
South Carolina	37	3
Tennessee	106	44
Texas	43	25
Virginia	59	19
West Virginia	95	50
	973	370
Ohio (outside Cincinnati)	134	41
Cincinnati	207	—
Other States and Foreign	163	29
Total Physicians	1477	440
Tropical Medicine and Malaria (not physicians)	52	1
Medical Students (Cincinnati)	88	
Technical Exhibitors	231	
Technical Exhibitors (Cincinnati)	38	
Miscellaneous	59	
Miscellaneous (Cincinnati)	45	
	1990	441
Ladies	441	
Grand Total	2431	

These figures are compiled from the card registration. There are always a number of physicians attending who neglect to register. The number attending who fail to register is estimated at from 3 to 10 per cent of the total registration. It is believed that at least 5 per cent of the physicians who attended the Cincinnati meeting failed to register, and if this be true, an additional 74 physicians should be added to the 1,477 who did register, making the actual attendance apparently at least 1,551 physicians with a grand total of 2,505.

HOBBY EXHIBITS

The Association had its sixth Hobby Exhibit in connection with the Cincinnati meeting, Netherland Plaza Hotel, in the passage between the North and South Halls, Fourth Floor. Here are the names of the physicians who exhibited some of their hobby work:

Martin H. Fischer, Cincinnati, O.: Paintings in Oil.

J. O. Fitzgerald, Jr., Richmond, Va.: Photographs.

Leslie H. French, Washington, D. C.: Photographs.

David S. Ruhe, Atlanta, Ga.: Landscapes in Oil and Portrait in Charcoal.

Sidney W. Scorse, Webb City, Mo.: Water Color Portrait and Landscapes.

Carrol C. Turner, Memphis, Tenn.: Photographs.

SCIENTIFIC AND TECHNICAL EXHIBITS

The Scientific and Technical Exhibits in connection with the thirty-ninth annual meeting of the Southern Medical Association were all placed at the Netherland Plaza Hotel, Cincinnati, Scientific Exhibits in the North Corridor and the North Hall on the Fourth Floor and in the Third Floor Foyer, and the Technical Exhibits were in the North Hall and South Hall on the Fourth Floor, and were open on Monday from 12:00 noon until 5:30 p. m. and on Tuesday, Wednesday and Thursday from 8:30 a. m. until 5:30 p. m., November 12-15.

There were eighteen (18) scientific exhibits representing all phases of medicine and surgery, many of them being of original research work. Scientific Exhibits were conveniently placed and arranged so that they could be easily seen and studied. See complete list of Scientific Exhibits below.

In the Technical Exhibits there were fifty-four (54) business firms with a total of seventy-two (72) exhibit spaces utilizing all the space that could be made available for Technical Exhibits. See page 94 for complete list fo business firms.

SCIENTIFIC EXHIBITS

The following were the Scientific Exhibits at the Cincinnati meeting, Netherland Plaza Hotel:

In North Corridor, Fourth Floor

U. S. Navy, Bureau of Medicine and Surgery and Naval Medical School, Washington, D. C.: Audio Visual Aids in Medicine, Plastic Prostheses, Sulfa Fast Streps, Penicillin in Syphilis, and The Story of Whole Blood.

Clarence E. Gardner, Arthur James and Will C. Sealy, Duke University School of Medicine, Durham, N. C.: Chest Injuries.

Mississippi State Board of Health, Maternal and Child Health Department, Jackson, Miss.: A New Hemoglobin Test for Public Health Use.

In North Hall (entrance from Hall of Mirrors, Fourth Floor)

John Adriani and Ray T. Parmley, Louisiana State University School of Medicine and Charity Hospital, New Orleans, La.: Saddle Block Anesthesia.

Russell B. Bailey and Charles D. Hershey, Wheeling, W. Va.: Thrombophlebitis.

Office of Inter-American Affairs, Washington, D. C.: Inter-American Cooperative Health Program.

Baruch Committee on Physical Medicine, New York, N. Y.: A Community Rehabilitation Service and Center.

Sheppard and Enoch Pratt Hospital, Occupational Therapy Department, Towson, Md.: Occupational and Recreational Activities in a Psychiatric Hospital.

In Third Floor Foyer

U. S. Army Air Forces, Office of the Air Surgeon, Convalescent Training Division, Washington, D. C.: The Convalescent Services Program in the Army Air Forces.

U. S. Army, Office of the Surgeon General, Technical Information Division, Washington, D. C.: New Type Depth Focus Clinical Camera (First Exhibition).

U. S. Public Health Service, Malaria Control in War Areas, Atlanta, Ga., and National Institute of Health, Bethesda, Md.: Schistosomiasis.

U. S. Public Health Service, National Institute of Health, G. Robert Coatney, W. Clark Cooper, David S. Ruhe and Martin D. Young, Bethesda, Md.: Vivax Malaria.

Arthur Judson Walker, Tulane University School of Medicine, New Orleans, La.: Thick Blood Film Technique in Malaria.

William B. Redmond, Emory University School of Medicine, Atlanta, Ga.: Apparatus for Circulating and Aerating Defibrinated Blood.

American Cancer Society, New York, N. Y.: Cancer Detection in General Practice.

American Medical Association, Thomas G. Hull, Director of Scientific Exhibit, Chicago, Ill.: Food Poisoning and Food-Borne Infections.

A. P. Hudgins, Charleston, W. Va.: New Cannula for Hysterosalpingography.

National Committee on Alcohol Hygiene, Inc., Baltimore, Md.: Alcohol Hygiene.

MOTION PICTURES

A motion picture program was not developed for the Cincinnati meeting. It is one of the things that the shortness of time to arrange a meeting made it necessary to omit this year.

SECTION ON GENERAL PRACTICE

Officers

Chairman—Dr. B. A. Hopkins, Stuart, Virginia.
Vice-Chairman—Dr. C. W. C. Moore, Talladega, Alabama
Secretary—Dr. Roy I. Millard, Russellville, Arkansas.

Thursday, November 15, 9:00 a. m.

The Section met in the Pavillon Caprice, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. B. A. Hopkins, Stuart, Virginia, who read his Chairman's Address entitled "The General Practitioner and Rural Medical Care."

The Chairman appointed the following Nominating Committee: Dr. W. L. Pressly, Chairman, Due West, South Carolina; Dr. G. T. McLamb, Mebane, North Carolina; and Dr. J. T. Shelburne, Critz, Virginia.

Dr. Walter C. Alvarez, Mayo Clinic, Rochester, Minnesota, read a paper entitled, "What is Wrong with the Dyspeptic Whose Findings Are All Negative?"

Dr. Wm. H. Sebrell, Chief of Division of Physiology, National Institute of Health, U. S. Public Health Service, Bethesda, Maryland, read a paper entitled, "Deficiency Diseases in General Practice" (Lantern Slides), which was discussed by Dr. John B. Youmans, Nashville, Tennessee; Dr. D. J. Miller, Morgantown, Kentucky; and in closing by the essayist.

Dr. Frederick T. Billings, Nashville, Tennessee (Major, Medical Corps, AUS, Chief of General Medicine Branch, Office of the Surgeon General, Washington, D. C.) read a paper entitled "Principles of Penicillin Therapy" (Lantern Slides).

Dr. Lee Bivings, Atlanta, Georgia, read a paper entitled "A Discussion of Common Skin Diseases in Children" (Kodachrome Lantern Slides).

Dr. Hoyt L. Choate, Little Rock, Arkansas, read a paper entitled "Management of Some Common Obstetrical Complications in General Practice."

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. C. W. C. Moore, Talladega, Alabama.
Vice-Chairman—Dr. Roy I. Millard, Russellville, Arkansas.
Secretary—Dr. John R. Bender, Winston-Salem, North Carolina.

The Section then adjourned *sine die*.

SECTION ON MEDICINE

Officers

Chairman—Dr. Grace A. Goldsmith, New Orleans, Louisiana.
Vice-Chairman—Dr. William H. Kelley, Charleston, South Carolina.
Secretary—Dr. Drew Luten, St. Louis, Missouri.

Wednesday, November 14, 9:00 a. m.

The Section met in the Pavillon Caprice, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. Grace A. Goldsmith, New Orleans, Louisiana, who read her Chairman's Address entitled "Importance of Vitamins of the B Complex in Clinical Medicine," which was discussed by Dr. Edgar Jones, Nashville, Tennessee; and Dr. C. H. Mills, Cincinnati, Ohio.

The Chairman appointed the following Nominating Committee: Dr. T. Dewey Davis, Chairman, Richmond, Virginia; Dr. Walter E. Vest, Huntington, West Virginia; and Dr. Oliver C. Melson, Little Rock, Arkansas.

Dr. John A. Toomey, Professor of Clinical Pediatrics and Contagious Diseases, Western Reserve University School of Medicine, Cleveland, Ohio, read a paper entitled "Respiratory Emergency" (Lantern Slides).

Dr. Joseph C. Edwards, St. Louis, Missouri, read a paper entitled "Cardiac Problems in a General Hospital Overseas" (Lantern Slides), which was discussed by Dr. Drew Luten, St. Louis, Missouri.

Dr. William H. Higgins, Richmond, Virginia, read a paper enitled "Periarteritis Nodosa: Clinical Manifestations, and Post-Mortem Findings with a Report of Six Cases" (Lantern Slides), which was discussed by Dr. Jas. Asa Shield, Richmond, Virginia; Dr. T. Dewey Davis, Richmond, Virginia; Dr. Pearl M. Zeek, Cincinnati, Ohio; Dr. M. Pinson Neal, Columbia, Missouri; and in closing by the essayist.

Dr. G. O. Broun, St. Louis, Missouri, read a paper entitled "Effect of Choline Administration on the Blood Picture in Hepatic Cirrhoses" (Lantern Slides), which was discussed by Dr. C. E. Roach, Indianapolis, Indiana, and in closing by the essayist.

Paper by Dr. Ellard Yow, Dr. John Avera, and Dr. George T. Harrell, Winston-Salem, North Carolina, entitled "Prediction of the Requirements Necessary for Effective Penicillin Therapy: Comparison of In Vitro and In Vivo Response in Seventy-five Cases of Acute and Chronic Infections of Varied Etiology" (Lantern Slides), was read by Dr. Yow and was discussed by Dr. Elbert L. Persons, Durham, North Carolina; Dr. William H. Kelley, Charleston, South Carolina; Dr. A. H. Dunn, Columbus, Ohio; and in closing by Dr. Harrell.

Paper by Dr. W. A. Sodeman and Dr. Vincent J. Derbes, New Orleans, Louisiana, entitled "The Febrile Asthmatic" (Lantern Slides), was read by Dr. Sodeman.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. William H. Kelley, Charleston, South Carolina.
Vice-Chairman—Dr. Arthur J. Schwertman, Covington, Kentucky.
Secretary—Dr. William M. Nicholson, Durham, North Carolina.

The Section then adjourned *sine die*.

SECTION ON GASTROENTEROLOGY

Officers

Chairman—Dr. Julian M. Ruffin, Durham, North Carolina.
Vice-Chairman—Dr. John Tilden Howard, Baltimore, Maryland.
Secretary—Dr. Cecil O. Patterson, Dallas, Texas.

Tuesday, November 13, 2:00 p. m.

The Section met in the Pavillon Caprice, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. Julian M. Ruffin, Durham, North Carolina, who presided.

The Chairman appointed the following Nominating Committee: Dr. James L. Borland, Chairman, Jacksonville, Florida; Dr. William M. Ballinger Washington, District of Columbia; and Dr. Vern H. Musick, Oklahoma City, Oklahoma.

Paper by Dr. Vern H. Musick, Dr. Howard Hopps, Dr. H. T. Avey and Arthur A. Hellbaum, Oklahoma City, Oklahoma, entitled "The Effect of Caffeine on Gastric Secretion" (Lantern Slides), was read by Dr. Musick and was discussed by Dr. Leon Schiff, Cincinnati, Ohio; Dr. Cecil O. Patterson, Dallas, Texas; Dr. G. A. Smith, Montgomery, West Virginia; and in closing by Dr. Musick.

Dr. Tinsley R. Harrison, Dallas, Texas, read a paper entitled "Pain in the Chest as a Result of Gastro-Intestinal Disorders" (Lantern Slides), which was discussed by Dr. M. A. Blankenhorn, Cincinnati, Ohio; Dr. John L. Carmichael, Birmingham, Alabama; Dr. Seale Harris, Birmingham, Alabama; Dr. J. Russell Verbrycke, Washington, District of Columbia; and in closing by the essayist.

Dr. Julian M. Ruffin, Durham, North Carolina, read his Chairman's Address entitled "The Nutritional State of the Civilian Population of Southern Germany" (Lantern Slides), of which the co-essayist is Cyrus E. French, Boston, Massachusetts (Captain, Sanitation Corps, AUS).

Dr. Chester M. Jones, Clinical Professor of Medicine, Harvard Medical School, Boston, Massachusetts, read a paper entitled "Some Clinical Aspects of Cirrhosis of the Liver" (Lantern Slides).

Dr. William M. Ballinger, Washington, District of Columbia, read a paper entitled "Diverticula of the Digestive Tract: A Review of the Literature with Observations Based on a Survey of 1000 Consecutive Office Cases," which was discussed by Dr. Irvin Abell, Sr., Louisville, Kentucky; and Dr. Julian M. Ruffin, Durham, North Carolina.

Dr. James L. Borland, Jacksonville, Florida (Major, Medical Corps, AUS, Regional Hospital, Fort George G. Meade, Maryland) read a paper entitled "The Use of Sulfonamids in Some of the Common Infectious Diseases of the Bowel" (Lantern Slides), which was discussed by Dr. Gordon McHardy, New Orleans, Louisiana.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. John Tilden Howard, Baltimore, Maryland.
Vice-Chairman—Dr. Gordon McHardy, New Orleans, Louisiana.
Secretary—Dr. Cecil O. Patterson, Dallas, Texas.

The Section then adjourned *sine die*.

SECTION ON NEUROLOGY AND PSYCHIATRY

Officers

Chairman—Dr. Cobb Pilcher, Nashville, Tennessee.
Vice-Chairman—Dr. Jas. Asa Shield, Richmond, Virginia.
Secretary—Dr. Hervey M. Cleckley, Augusta, Georgia.

Tuesday, November 13, 9:00 a. m.

The Section met in the Pavillon Caprice, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. Cobb Pilcher, Nashville, Tennessee, who presided.

The Chairman appointed the following Nominating Committee: Dr. David C. Wilson, Chairman, Charlottesville, Virginia; Dr. Spafford Ackerly, Louisville, Kentucky; and Dr. W. A. Risteen, Augusta, Georgia.

Paper by Dr. David C. Wilson, Dr. W. Motley White, and (Mrs.) Dorothy Rymarkiewiczowa, Charlottesville, Virginia, entitled "Anorexia Nervosa with Special Regard to Insulin Therapy," was read by Dr. Wilson and was discussed by Dr. Jas. Asa Shield, Richmond, Virginia; Dr. Daniel L. Sexton, St. Louis, Missouri; Dr. Barbara Jean Betz, Baltimore, Maryland; Dr. Philip K. Burwell, Montgomery, Alabama; and in closing by Dr. Wilson.

Paper by Dr. W. A. Risteen and Dr. Perry P. Volpitto, Augusta, Georgia, entitled "Role of Stellate Ganglion Block in Certain Neurologic Disorders," was read by Dr. Risteen, and was discussed by Dr. V. P. Sydenstricker, Augusta, Georgia; Dr. R. Eustace Semmes, Memphis, Tennessee; and in closing by Dr. Risteen.

Dr. Cobb Pilcher, Nashville, Tennessee, read his Chairman's Address entitled "Newer Methods of Hemostasis in Neurosurgery" (Lantern Slides).

Dr. Joseph P. Evans, Associate Professor of Surgery, University of Cincinnati College of Medicine, Cincinnati, Ohio, read a paper entitled "Brain Injury: Some Clinical and Pathological Corrections" (Lantern Slides).

Dr. Barbara Jean Betz, Baltimore, Maryland, read a paper entitled "Experiences in Psychotherapy of Obsessive Schizophrenic Personalities," which was discussed by Dr. David C. Wilson, Charlottesville, Virginia, and in closing by the essayist.

Dr. Maurice H. Greenhill, Durham, North Carolina, read a paper entitled "A Psychosomatic Evaluation of the Psychiatric and Endocrinological Factors in the Menopause," which was discussed by Dr. Louis A. Lurie, Cincinnati, Ohio; Dr. H. S. Kupperman, Augusta, Georgia; Dr. David C. Wilson, Charlottesville, Virginia; Dr. H. Randolph Unsworth, New Orleans, Louisiana; and in closing by the essayist.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Jas. Asa Shield, Richmond, Virginia.
Vice-Chairman—Dr. Titus H. Harris, Galveston, Texas.
Secretary—Dr. Hervey M. Cleckley, Augusta, Georgia.

The Section then adjourned *sine die*.

SECTION ON PEDIATRICS

Officers

Chairman—Dr. Angus McBryde, Durham, North Carolina.
Vice-Chairman and Acting Chairman—Dr. Joseph A. Bauer, St. Louis, Missouri.
Secretary—Dr. W. Ambrose McGee, Richmond, Virginia.

Wednesday, November 14, 2:00 p. m.

The Section met in the Pavillon Caprice, Netherland Plaza, Hotel, Cincinnati, Ohio, and was called to order by the Secretary, Dr. W. Ambrose McGee, Richmond, Virginia, who presided until after the Acting Chairman read his Address. (The Chairman, Dr. McBryde, was prevented from attending due to illness.)

The Acting Chairman appointed the following Nominating Committee: Dr. Wallace A. Clyde, Chairman, Birmingham, Alabama; Dr. Wm. Weston Jr., Columbia, South Carolina; and Dr. Wm. Willis Anderson, Atlanta, Georgia.

Dr. Joseph A. Bauer, St. Louis, Missouri, read his Address as Acting Chairman entitled "Pediatric Trends."

Dr. A. A. Weech, B. K. Rachford Professor of Pediatrics, University of Cincinnati College of Medicine, Cincinnati, Ohio, read a paper entitled "Medical Science at War: Lessons of Value for Post-War Research."

Dr. Jay M. Arena, Durham, North Carolina, read a paper entitled "Pre-Measles Encephalitis," which was discussed by Dr. Gilbert J. Levy, Memphis, Tennessee; Dr. E. W. Stevens, West Palm Beach, Florida; Dr. John A. Toomey, Cleveland, Ohio; Dr. Lee Bivings, Atlanta, Georgia; and in closing by the essayist.

Dr. Hughes Kennedy, Jr., Birmingham, Alabama, read a paper entitled "Does Rh Factor Incompatibility Explain All Cases of Hemolytic Anemia in the Newborn?: Case Reports" (Lantern Slides), which was discussed by Dr. Lee Bivings, Atlanta, Georgia; Dr. Robert L. Biltz, Newport, Kentucky; and in closing by the essayist.

Paper by Dr. William Venning and Dr. George T. Harrell, Winston-Salem, North Carolina, entitled "Prevention and Control of Disturbances of Proteins in Rocky Mountain Spotted Fever by Forced Feeding" (Lantern Slides), was read by Dr. Harrell and was discussed by Dr. William F. Burdick, Washington, District of Columbia; Dr. J. Gay Van Dermark, Covington, Kentucky; and Miss Mary Jane Dingledine, Dietitian, Baptist Hospital, Winston-Salem, North Carolina.

Dr. Margaret M. Nicholson, Washington, District of Columbia, read a paper entitled "Management of the Child with Cardiac Disease" (Lantern Slides), which was discussed by Dr. James W. Bruce, Louisville, Kentucky; and Dr. James B. Stone, Richmond, Virginia.

Paper by Dr. Edwin L. Kendig, Jr., Richmond, Virginia, and Dr. Janet B. Hardy, Baltimore, Maryland, entitled "Usual and Unusual Findings in Tuberculosis of Infancy," was read by Dr. Kendig, and was discussed by Dr. Stewart H. Welch, Birmingham, Alabama; Dr. J. Buren Sidbury, Wilmington, North Carolina; and in closing by Dr. Kendig.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Stewart H. Welch, Birmingham, Alabama.
Vice-Chairman—Dr. Ralph V. Platou, New Orleans, Louisiana.
Secretary—Dr. W. Ambrose McGee, Richmond, Virginia.

The Section then adjourned *sine die*.

SECTION ON PATHOLOGY

Officers

Chairman—Dr. Robert A. Moore, St. Louis, Missouri.
Vice-Chairman—Dr. Oscar B. Hunter, Washington, District of Columbia.
Secretary—Dr. Roger D. Baker, Birmingham, Alabama.

Tuesday, November 13, 2:00 p. m.

The Section met in Parlors A-B-C-D, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. Robert A. Moore, St. Louis, Missouri, who read his Chairman's Address entitled "State Medicolegal Examiners," which was discussed by Dr. Douglas H. Sprunt, Memphis, Tennessee; Dr. Roger D. Baker, Birmingham, Alabama; Dr. Wiley D. Forbus, Durham, North Carolina; Dr. Oscar B. Hunter, Washington, District of Columbia; Dr. Alfred Blumberg, Fort Bragg, North Carolina; and in closing by the essayist.

The Chairman appointed the following Nominating Committee: Dr. Wiley D. Forbus, Chairman, Durham, North Carolina; Dr. R. H. Rigdon, Little Rock, Arkansas; and Dr. Douglas H. Sprunt, Memphis, Tennessee.

Dr. G. John Buddingh, Nashville, Tennessee, read a paper entitled "Virus Stomatitis and Virus Diarrhea of Infants and Young Children," which was discussed by Dr. Katherine Dodd, Cincinnati, Ohio; Dr. Carroll M. Pounders, Oklahoma City, Oklahoma; Dr. Albert B. Sabin, Cincinnati, Ohio; and in closing by the essayist.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Oscar B. Hunter, Washington, District of Columbia.
Vice-Chairman—Dr. Alfred Blumberg, Fort Bragg, North Carolina.
Secretary—Dr. Roger D. Baker, Birmingham, Alabama.

Dr. J. A. Cunningham, Birmingham, Alabama, read a paper entitled "Amyotonia Congenita" (Lantern Slides), which was discussed by Dr. Wiley D. Forbus, Durham, North Carolina; and in closing by the essayist.

Paper by Dr. James R. Dawson and Dr. Henry C. McGill, Nashville, Tennessee, entitled "Observations on Renal Pyramidal Necrosis in Diabetes" (Lantern Slides), was read by Dr. Dawson and was discussed by Dr. R. H. Rigdon, Little Rock, Arkansas; and in closing by Dr. Dawson.

Dr. Pearl M. Zeek, Associate Professor of Pathology, University of Cincinnati College of Medicine, Cincinnati, Ohio, read a paper entitled "Periarteritis Nodosa" (Lantern Slides), which was discussed by Dr. M. Pinson Neal, Columbia, Missouri; Dr. I. S. Kahn, San Antonio, Texas; and in closing by the essayist.

Dr. G. L. Fite, Carville, Louisiana, read a paper entitled "Regressive Changes in Leprosy Under Promin Therapy" (Lantern Slides), which was discussed by Dr. E. V. Cowdry, St. Louis, Missouri; and in closing by the essayist.

Dr. I. N. Dubin, Memphis, Tennessee, read a paper entitled "Pathological Study of Mice Infected with the Virus of Swine Influenza" (Lantern Slides), which was discussed by Dr. Albert B. Sabin, Cincinnati, Ohio; and in closing by the essayist.

The Section then adjourned *sine die*.

SECTION ON RADIOLOGY

Officers

Chairman—Dr. Robert J. Reeves, Durham, North Carolina.
Vice-Chairman—Dr. Karl F. Kesmodel, Birmingham, Alabama.
Secretary—Dr. Paul F. Titterington, St. Louis, Missouri.

Monday, November 12, 2:00 p. m.

The Section met in the Pavillon Caprice, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. Robert J. Reeves, Durham, North Carolina, who read his Chairman's Address, entitled "Treatment of Roentgen Sickness by Oral Administration of Pyridoxine."

Paper by Dr. Joseph Abernethy and Dr. George T. Harrell, Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, North Carolina, entitled "Effect of Anti-Reticular Cytotoxic Serum in the Therapy of Hodgkin's Disease" was read by Dr. Abernethy and was discussed by Dr. Wiley D. Forbus, Durham, North Carolina; Dr. Robert J. Reeves, Durham, North Carolina; and in closing by Dr. Harrell.

Paper by Dr. Vincent W. Archer and Dr. Norman Adair, University, Virginia, entitled "Roentgen Diagnosis of Placenta Previa Without Contrast Material" (Lantern Slides), was read by Dr. Archer and was discussed by Dr. R. A. White, Asheville, North Carolina, and in closing by Dr. Archer.

The Chairman appointed the following Nominating Committee: Dr. Vincent W. Archer, Chairman, University, Virginia; Dr. I. T. Fugate, Louisville, Kentucky; and Dr. Ross S. McElwee, Statesville, North Carolina.

Paper by Dr. Marcus Ostro and Dr. David I. Macht, Baltimore, Maryland, entitled "Preliminary Report of Physiological and Radiological Studies on Hemophilia" (Lantern Slides), was read by Dr. Macht and was discussed by Dr. Robert J. Reeves, Durham, North Carolina; and in closing by Dr. Macht.

Dr. Roy G. Giles, San Antonio, Texas, read a paper entitled "Roentgenological Consideration of Gastric Disturbances with Special Reference to the Stomach and Duodenum," which was discussed by Dr. Vincent W. Archer, University, Virginia; Dr. Robert J. Reeves, Durham, North Carolina; and in closing by the essayist.

Dr. R. P. O'Bannon, Fort Worth, Texas, read a paper entitled "Diagnosis and Differential Diagnosis of the Phrenic Ampulla, the Congenitally Short Esophagus with Partial Thoracic Stomach, and Hernia of the Esophageal Hiatus" (Lantern Slides), which was discussed by Dr. Robert J. Reeves, Durham, North Carolina.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Karl F. Kesmodel, Birmingham, Alabama.
Vice-Chairman—Dr. Paul F. Titterington, St. Louis, Missouri.
Secretary—Dr. J. Marsh Frere, Chattanooga, Tennessee.

The Section then adjourned *sine die*.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

Officers

Chairman—Dr. Charles O. King, Birmingham, Alabama.
Vice-Chairman—Dr. Everett R. Seale, Houston, Texas.
Secretary—Dr. Francis A. Ellis, Baltimore, Maryland.

Tuesday, November 13, 9:00 a. m.

The Section met in Parlors A-B-C-D, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. Charles O. King, Birmingham, Alabama, who read his Chairman's Address, entitled "Post-Traumatic Sarcoid-Like Lesions" (Lantern Slides).

The Chairman appointed the following Nominating Committee: Dr. Clinton W. Lane, Chairman, St. Louis, Missouri; Dr. C. A. Andrews, Tampa, Florida; and Dr. Onis G. Hazel, Oklahoma City, Oklahoma.

Dr. George M. Lewis, Associate Professor of Clinical Medicine (Dermatology), Cornell University Medical College, New York, New York, read a paper entitled "Management of Dermatophytosis" (Lantern Slides), which was discussed by Dr. Richard S. Weiss, St. Louis, Missouri; Dr. Thomas W. Murrell, Richmond, Virginia; Dr. Frederick A. Glass, Baltimore, Maryland; and in closing by the essayist.

Dr. Edwin E. Barksdale, Danville, Virginia (Lieutenant Commander, Medical Corps, USNR, Bethesda, Maryland), read a paper entitled "Penicillin in the Treatment of Syphilis: Results and Complications," which was discussed by Dr. Dudley C. Smith, Charlottesville, Virginia; Dr. Adolph H. Conrad, St. Louis, Missouri; Dr. Harry M. Robertson, Baltimore, Maryland; Dr. Monroe Wolf, New Orleans, Louisiana; and in closing by the essayist.

Dr. Norman Tobias, St. Louis, Missouri, read a paper entitled "Skin Eruptions of the Hands: Some Observations on Diagnosis and Treatment," which was discussed by Dr. George M. Lewis, New York, New York; and in closing by the essayist.

Dr. Howard Hailey, Atlanta, Georgia, read a paper entitled "Treatment of Creeping Eruption (Larva Migrans)" (Lantern

Slides), which was discussed by Dr. James G. Thomas, Jackson, Mississippi; Dr. Joseph M. Hitch, Raleigh, North Carolina; Dr. Dudley C. Smith, Charlottesville, Virginia; Dr. A. H. Lancaster, Knoxville, Tennessee; Dr. C. A. Andrews, Tampa, Florida; Dr. M. T. Van Studdiford, New Orleans, Louisiana; Dr. Everett R. Seale, Houston, Texas; and in closing by the essayist.

Paper by Dr. J. Lamar Callaway, Dr. Kathleen A. Riley, Dr. Beatrice H. Kuhn and Dr. Sherwood W. Barefoot, Durham, North Carolina, entitled "Dermatitis Hypostatica: Combined Dermatological and Surgical Treatment" (Lantern Slides), was read by Dr. Callaway and was discussed by Dr. Ashton L. Welsh, Cincinnati, Ohio; Dr. Onis G. Hazel, Oklahoma City, Oklahoma; Dr. Edwin E. Barksdale, Danville, Virginia; Dr. Thomas W. Murrell, Jr., Richmond, Virginia; Dr. Francis A. Ellis, Baltimore, Maryland; Dr. Joseph M. Hitch, Raleigh, North Carolina; and in closing by Dr. Calloway.

Dr. Frederick A. Glass, Baltimore, Maryland, read a paper entitled, "Dermatologist's Role in the Control of Tinea Capitis," which was discussed by Dr. George M. Lewis, New York, New York; Dr. Richard S. Weiss, St. Louis, Missouri; Dr. Floyd R. Town, Lansing, Michigan; Dr. Clinton W. Lane, St. Louis, Missouri; Dr. Norbert C. Barwasser, Moline, Illinois; Dr. M. T. Van Studdiford, New Orleans, Louisiana; and in closing by the essayist.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. A. H. Lancaster, Knoxville, Tennessee.
Vice-Chairman—Dr. C. M. Hamilton, Nashville, Tennessee.
Secretary—Dr. Winfred A. Showman, Tulsa, Oklahoma.

The Section then adjourned *sine die*.

SECTION ON ALLERGY

Officers

Chairman—Dr. Edna S. Pennington, Nashville, Tennessee.
Vice-Chairman—Dr. I. S. Kahn, San Antonio, Texas.
Secretary—Dr. Frank A. Simon, Louisville, Kentucky.

Thursday, November 15, 9:00 a. m.

The Section met in Parlors A-B-C-D, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. Edna S. Pennington, Nashville, Tennessee, who presided.

The Chairman appointed the following Nominating Committee: Dr. Marion T. Davidson, Chairman, Birmingham, Alabama; Dr. Hal M. Davison, Atlanta, Georgia; and Dr. Charles H. Eyermann, St. Louis, Missouri.

Dr. Edna S. Pennington, Nashville, Tennessee, read her Chairman's Address entitled "Discussion of Non-specific Therapy in Allergy with Special Reference to Histamine."

Dr. Francis M. Rackemann, Instructor in Medicine, Harvard Medical School and Physician to Massachusetts General Hospital, Boston, Massachusetts, read a paper entitled "Some Future Problems in Allergy."

Dr. Leslie N. Gay, Baltimore, Maryland, read a paper entitled "Pathology of Bronchial Asthma: An Analysis of Twenty-four Autopsy Records in the Johns Hopkins Hospital" (Lantern Slides), which was discussed by Dr. Roger D. Baker, Birmingham, Alabama; Dr. W. Ambrose McGee, Richmond, Virginia; Dr. Charles H. Eyermann, St. Louis, Missouri; Dr. Edna S. Pennington, Nashville, Tennessee; Dr. Francis M. Rackemann, Boston, Massachusetts; and in closing by the essayist.

Dr. J. Warrick Thomas, Richmond, Virginia, read a paper entitled "Privine Sensitivity: Report of Eight Cases" (Lantern Slides), which was discussed by Dr. Frank A. Simon, Louisville, Kentucky; Dr. Hal M. Davison, Atlanta, Georgia; Dr. Charles H. Eyermann, St. Louis, Missouri; Dr. E. Paul Shepard, Chillicothe, Ohio; Dr. Armand E. Cohen, Louisville, Kentucky; Dr. Francis M. Rackemann, Boston, Massachusetts; Dr. Leslie N. Gay, Baltimore, Maryland; and in closing by the essayist.

Dr. Marion T. Davidson, Birmingham, Alabama, read a paper entitled "Bacterial Allergy, A Misnomer."

The Nominating Committee reported the following nominations for Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. I. S. Kahn, San Antonio, Texas.
Vice-Chairman—Dr. J. Warrick Thomas, Richmond, Virginia.
Secretary—Dr. Frank A. Simon, Louisville, Kentucky.

The Section then adjourned for a round table luncheon meeting.

Thursday, November 15, 12:30 noon

The Section met in Parlor I, Netherland Plaza Hotel, for a Round Table Luncheon, the Chairman, Dr. Edna S. Pennington, presiding.

Dr. Francis M. Rackemann, Boston, Massachusetts, and Dr. Leslie N. Gay, Baltimore, Maryland, gave informal talks and answered questions on various phases of allergy.

The Section then adjourned *sine die*.

SECTION ON PHYSICAL MEDICINE

Officers

Chairman—Dr. Nathan H. Polmer, New Orleans, Louisiana.
Vice-Chairman—Dr. Ben L. Boynton, Norfolk, Virginia.
Secretary—Dr. Robert L. Bennett, Warm Springs, Georgia.

Thursday, November 15, 2:00 p. m.

The Section met in Parlors A-B-C-D, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by Dr. Arthur M. Pruce, Atlanta, Georgia, who presided in the absence of Section officers. (The Chairman, Dr. Polmer, was absent due to serious illness in his family and the Secretary, Dr. Bennett, was reading a paper in another section meeting at the same time as this one.)

Dr. Frances A. Hellebrandt, Medical College of Virginia, Richmond, Virginia, read a paper entitled "Recent Advances in Methods of Hastening Convalescence Through Exercise."

Dr. Earl C. Elkins, Mayo Clinic, Rochester, Minnesota, read a paper entitled "Physical Rehabilitation for the Severely Handicapped" (Lantern Slides).

Dr. Arthur M. Pruce, Captain, Medical Corps, AUS, Lawson General Hospital, Atlanta, Georgia, read a paper entitled "Treatment of Peripheral Nerve Injuries" (Lantern Slides).

Dr. G. J. P. Barger, Georgetown University Hospital, Washington, D. C., read a paper entitled "Physical Medicine in General Practice" (Motion Pictures).

The Section elected the following officers for next year:

Chairman—Dr. Robert L. Bennett, Warm Springs, Georgia.
Vice-Chairman—Dr. Frances A. Hellebrandt, Richmond, Virginia.
Secretary—Dr. Emil J. C. Hildenbrand, Washington, D. C.

The Section then adjourned *sine die*.

SECTION ON INDUSTRIAL MEDICINE AND SURGERY

Officers

Chairman—Dr. C. W. Roberts, Atlanta, Georgia.
Vice-Chairman—Dr. Oliver B. Zeinert, St. Louis, Missouri.
Secretary—Dr. J. J. Brandabur, Huntington, West Virginia.

Wednesday, November 14, 2:00 p. m.

The Section met in Parlors A-B-C-D, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Secretary, Dr. J. J. Brandabur, Huntington, West Virginia, who presided.

Dr. C. W. Roberts, Atlanta, Georgia, read his Chairman's Address entitled "Industrial Medicine in the New Era."

Dr. Carl M. Peterson, Secretary, Council on Industrial Health, American Medical Association, Chicago, Illinois, read a paper entitled "A Report from the Field."

Dr. Howard A. Rusk, Consultant in Physical Rehabilitation, Baruch Committee on Physical Medicine, New York, New York, read a paper entitled "The Disabled, The Physician and Employment."

Dr. Robert P. Kelly, Lieutenant Colonel, Medical Corps, AUS, White Sulphur Springs, West Virginia, read a paper entitled "Rehabilitation of the Injured Arm and Forearm."

Dr. Edgar F. Fincher, Jr., Atlanta, Georgia, read a paper entitled "Neuro-Surgical Experiences in the Lumbo-Sciatic Syndrome."

These five papers were discussed together, the following participating in the discussion: Dr. John E. Dawson, Newport, Kentucky; Dr. Frank P. Strickler, Louisville, Kentucky; Dr. Howard A. Rusk, New York, New York; Dr. E. Bennette Henson, Charleston, West Virginia; and Dr. Bert C. Wiley, Dayton, Ohio.

The Nominating Committee, Dr. J. J. Brandabur, Chairman, Huntington, West Virginia; Dr. Howard A. Rusk, New York, New York; and Dr. C. W. Roberts, Atlanta, Georgia, reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Oliver B. Zeinert, St. Louis, Missouri.
Vice-Chairman—Dr. Stanley J. Seeger, Texarkana, Texas.
Secretary—Dr. J. J. Brandabur, Huntington, West Virginia.

The Section then adjourned *sine die*.

SECTION ON SURGERY

Officers

Chairman—Dr. William F. Rienhoff, Jr., Baltimore, Maryland.
Vice-Chairman—Dr. O. R. Sevin, St. Louis, Missouri.
Secretary—Dr. R. J. Wilkinson, Huntington, West Virginia.

Tuesday, November 13, 9:00 a. m.

The Section met in the Hall of Mirrors, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. William F. Rienhoff, Jr., Baltimore, Maryland, who presided.

Paper by Dr. Russell B. Bailey and Dr. C. D. Hershey, Wheeling, West Virginia, entitled "Vein Ligation in Thrombophlebitis" (Lantern Slides), was read by Dr. Bailey and was discussed by Dr. Albert J. Vesper, Jr., Covington, Kentucky; and in closing by Dr. Hershey.

The Chairman appointed the following Nominating Committee: Dr. E. L. Henderson, Chairman, Louisville, Kentucky; Dr. W. A. Selman, Atlanta, Georgia; and Dr. H. H. Shoulders, Nashville, Tennessee.

Dr. Robert A. Robinson, New Orleans, Louisiana, read a paper entitled "Surgical Complications of Amebiasis" (Lantern Slides), which was discussed by Dr. Curtice Rosser, Dallas, Texas; Dr. Monroe Wolf, New Orleans, Louisiana; and Dr. Hugh A. Gamble, Greenville, Mississippi.

Dr. Daniel C. Elkin, Atlanta, Georgia (Colonel, Medical Corps AUS, Ashford General Hospital, White Sulphur Springs, West Virginia) read a paper entitled "The Operative Treatment of Aneurysms and Arteriovenous Fistulas" (Lantern Slides), which was discussed by Dr. Fred W. Rankin, Lexington, Kentucky.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Walter C. Jones, Miami, Florida.
Vice-Chairman—Dr. J. L. Phythian, Newport, Kentucky.
Secretary—Dr. R. J. Wilkinson, Huntington, West Virginia.

Dr. O. Theron Clagett, Mayo Clinic, Rochester, Minnesota, read a paper entitled "Tumors of the Lung" (Lantern Slides), which was discussed by Dr. Edward J. McGrath, Cincinnati, Ohio; Dr. Richard H. Overholt, Boston, Massachusetts; Dr. William F. Rienhoff, Jr., Baltimore, Maryland; and in closing by the essayist.

Dr. William F. Rienhoff, Jr., Baltimore, Maryland, read his Chairman's Address entitled "Intrathoracic Esophagojejunostomy in the Treatment of Diseases of the Esophagus" (Lantern Slides), which was discussed by Dr. A. R. Beyer, Tampa, Florida.

Paper by Dr. Keith S. Grimson, Dr. H. M. Taylor, Dr. J. M. Ruffin, Dr. F. H. Hesser, Dr. J. C. Trent, and Dr. D. A. Wilson, Durham, North Carolina, entitled "Transthoracic Vagotomy for Duodenal Ulcers" (Lantern Slides), was read by Dr. Grimson and was discussed by Dr. Max M. Zinninger, Cincinnati, Ohio; Dr. R. L. Sanders, Memphis, Tennessee; Dr. A. J. Carlson, Dayton, Ohio; Dr. William F. Rienhoff, Jr., Baltimore, Maryland; and in closing by Dr. Grimson.

The Section then adjourned *sine die*.

SECTION ON ORTHOPEDIC AND TRAUMATIC SURGERY

Officers

Chairman—Dr. Winthrop M. Phelps, Baltimore, Maryland.
Vice-Chairman—Dr. Lenox D. Baker, Durham, North Carolina.
Secretary—Dr. Walter G. Stuck, San Antonio, Texas.

Tuesday, November 13, 2:00 p. m.

The Section met in the Hall of Mirrors, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. Winthrop M. Phelps, Baltimore, Maryland, who presided.

The Chairman appointed the following Nominating Committee: Dr. Earl D. McBride, Chairman, Oklahoma City, Oklahoma; Dr. H. R. McCarroll, St. Louis, Missouri; and Dr. J. Warren White, Greenville, South Carolina.

Paper by Dr. Harold B. Boyd and Dr. J. F. Hamilton, Memphis, Tennessee, entitled "Use of Penicillin in the Treatment of Acute Osteomyelitis" (Lantern Slides) was read by Dr. Boyd and was discussed by Dr. Lenox D. Baker, Durham, North Carolina; and in closing by Dr. Boyd.

Paper by Dr. Charles J. Frankel and Dr. Robert V. Funsten, Charlottesville, Virginia, entitled "Use of Neostigmine in Sub-Acute Poliomyelitis," was read by Dr. Frankel, and was discussed by Dr. H. R. McCarroll, St. Louis, Missouri; and in closing by Dr. Frankel.

Dr. D. H. O'Donoghue, Oklahoma City, Oklahoma, read a paper entitled "Consideration of Certain Fractures of the Ankle," which was discussed by Dr. J. Hadley Caldwell, Newport, Kentucky; Dr. Lenox D. Baker, Durham, North Carolina; Dr. J. Warren White, Greenville, South Carolina; and in closing by the essayist.

Dr. Winthrop M. Phelps, Baltimore, Maryland, read his Chairman's Address entitled "Recent Significant Trends in the Care of Cerebral Palsy."

Dr. Earl D. McBride, Oklahoma City, Oklahoma, read a paper entitled "Routine Examination of Back," which was discussed by Dr. H. R. McCarroll, St. Louis, Missouri; Dr. Lenox D. Baker, Durham, North Carolina; and in closing by the essayist.

Dr. Edward L. Compere, Associate Professor of Orthopedic Surgery, Northwestern University Medical School, Chicago, Illinois, read a paper entitled "Spinal Fusion Following Removal of Intervertebral Disk" (Lantern Slides), which was discussed by Dr. Austin T. Moore, Columbia, South Carolina; Dr. Earl D. McBride, Oklahoma City, Oklahoma; Dr. Charles J. Frankel, Charlottesville, Virginia; and in closing by the essayist.

Paper by Dr. Harold H. Kuhn, Charleston, West Virginia, and Dr. Robert G. Neill, Durham, North Carolina, entitled "Results of Removal of Ruptured Intervertebral Disk and Combined Disk-Fusion Operations: An Analysis of 288 Operations," was read by Dr. Kuhn and was discussed by Dr. Lenox D. Baker, Durham, North Carolina; Dr. Earl D. McBride, Oklahoma City, Oklahoma; Dr. Harold B. Boyd, Memphis, Tennessee; and in closing by Dr. Kuhn.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Lenox D. Baker, Durham, North Carolina.
Vice Chairman—Dr. Robert V. Funsten, Charlottesville, Virginia.
Secretary—Dr. Walter G. Stuck, San Antonio, Texas.

Dr. Earl D. McBride, Oklahoma City, Oklahoma, offered a resolution on the death of Dr. Guy W. Leadbetter, Washington, D. C., a former Chairman of this Section, which was unanimously adopted by the Section.

The Section then adjourned *sine die*.

SECTION ON GYNECOLOGY

Officers

Chairman—Dr. M. Y. Dabney, Birmingham, Alabama.
Vice-Chairman—Dr. Olin S. Cofer, Atlanta, Georgia.
Secretary—Dr. Wendell Long, Oklahoma City, Oklahoma.

Thursday, November 13, 9:00 a. m.

The Section met in the Hall of Mirrors, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. M. Y. Dabney, Birmingham, Alabama, who presided.

Dr. William T. Kennedy, Attending Surgeon, Woman's Hospital and Booth Memorial Hospital, New York, New York, read a paper entitled "Incontinence of Urine in the Female" (Motion Pictures and Lantern Slides).

The Chairman appointed the following Nominating Committee: Dr. H. Hudnall Ware, Jr., Chairman, Richmond, Virginia; Dr. W. Nicholson Jones, Birmingham, Alabama; and Dr. R. A. White, Asheville, North Carolina.

Dr. M. Y. Dabney, Birmingham, Alabama, read his Chairman's Address entitled "The Gynecologist's Role in Urologic Diagnosis" (Lantern Slides).

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Olin S. Cofer, Atlanta, Georgia.
Vice-Chairman—Dr. Robert E. Seibels, Columbia, South Carolina.
Secretary—Dr. Wendell Long, Oklahoma City, Oklahoma.

Dr. R. J. Crossen, St. Louis, Missouri, read a paper entitled "Carcinoma of the Fundus" (Lantern Slides), which was discussed by Dr. J. Milton Singleton, Kansas City, Missouri; Dr. William T. Kennedy, New York, New York; Dr. J. Isfred Hofbauer, Cincinnati, Ohio; Dr. Hugh A. Gamble, Greenville, Mississippi; and in closing by the essayist.

Dr. W. Nicholson Jones, Birmingham, Alabama, read a paper entitled "Penicillin in Acute Pelvic Inflammatory Diseases (Nonvenereal)" (Lantern Slides), which was discussed by Dr. Louise H. Branscomb, Birmingham, Alabama; Dr. Frank R. Lock, Winston-Salem, North Carolina; Dr. Erwin Straehley, Jr., Cincinnati, Ohio; and in closing by the essayist.

Dr. John D. Weaver, Assistant Professor of Obstetrics and Gynecology, University of Texas School of Medicine, Galveston, Texas, read a paper entitled "Estrogenic Hormones Too Often Only a Psychotherapeutic Agent" (Lantern Slides), which was discussed by Dr. Waverly R. Payne, Newport News, Virginia; Dr. Lee F. Turlington, Birmingham, Alabama; Dr. F. O. Plunkett, Lynchburg, Virginia; Dr. Erwin Straehley, Jr., Cincinnati, Ohio; and in closing by the essayist.

The Section then adjourned *sine die*.

SECTION ON OBSTETRICS

Officers

Chairman—Dr. H. Hudnall Ware, Jr., Richmond, Virginia.
Vice-Chairman—Dr. Waverly R. Payne, Newport News, Virginia.
Secretary—Dr. E. Lee Dorsett, St. Louis, Missouri.

Wednesday, November 14, 9:00 a. m.

The Section met in the Hall of Mirrors, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. H. Hudnall Ware, Jr., Richmond, Virginia, who read his Chairman's Address entitled "Ectopic Pregnancy: An Analysis of 265 Cases" (Lantern Slides).

Dr. Woodard D. Beacham, New Orleans, Louisiana, read a paper entitled "Study of the Abdominal Pregnancy Cases Managed at the Charity Hospital at New Orleans and a Review of the Literature" (Lantern Slides), which was discussed by Dr. Daniel J. Davies, Cincinnati, Ohio; Dr. Nicholson J. Eastman, Baltimore, Maryland; Dr. G. E. Johnson, Ardmore, Oklahoma; Dr. Lucien A. LeDoux, New Orleans, Louisiana; Dr. Stanley T. Garber, Cincinnati, Ohio; Dr. Wilbur E. Hoffman, Charleston, West Virginia; Dr. J. M. Weldon, Mobile, Alabama; Dr. H. Hudnall Ware, Jr., Richmond, Virginia; and in closing by the essayist.

Paper by Dr. Karl John Karnaky, Houston, Texas, entitled "Hydrogen ion Concentration in Monilia Albicans Infection and Treatments" (Lantern Slides), was read in his absence by Dr. A. P. Hudgins, Charleston, West Virginia, and was discussed by Dr. James R. Bloss, Huntington, West Virginia; Dr. Frank R. Lock, Winston-Salem, North Carolina; Dr. John D. Weaver, Galveston, Texas; and Dr. A. P. Hudgins, Charleston, West Virginia.

Paper by Dr. W. T. McConnell and Dr. John D. Gordinier, Louisville, Kentucky, entitled "Some Observations on the Rh Factor" (Lantern Slides), was read by Dr. Gordinier and was discussed by Dr. Marion F. Beard, Louisville, Kentucky; Dr. Richard Paddock, St. Louis, Missouri; Dr. Henry J. Langston, Danville, Virginia; and in closing by Dr. Gordinier.

The Chairman appointed the following Nominating Committee: Dr. R. A. White, Chairman, Asheville, North Carolina; Dr. John D. Weaver, Galveston, Texas; and Dr. F. O. Plunkett, Lynchburg, Virginia.

Paper by Dr. Herbert S. Kupperman and Dr. Robert B. Greenblatt, Augusta, Georgia, entitled "The Two-Hour Pregnancy Test" (Lantern Slides), was read by Dr. Kupperman.

Dr. Nicholson J. Eastman, Baltimore, Maryland, read a paper entitled "The Management of Placenta Previa" (Lantern Slides), which was discussed by Dr. William T. Kennedy, New York, New York; Dr. J. Isfred Hofbauer, Cincinnati, Ohio; Dr. Wilbur E. Hoffman, Charleston, West Virginia; Dr. A. L. Stabler, Birmingham, Alabama; Dr. Stanley T. Garber, Cincinnati, Ohio; Dr. L. J. Caldwell, Nashville, Tennessee; Dr. H. Hudnall Ware, Jr., Richmond, Virginia; and in closing by the essayist.

The Chairman introduced Dr. M. Y. Dabney, Birmingham, Alabama, President of the Southern Medical Association.

Dr. Waverly R. Payne, Newport News, Virginia, read a paper entitled "National Federation of Obstetrics and Gynecology—Its Aims and Plans," which was discussed by Dr. Woodard D. Beacham New Orleans, Louisiana; Dr. E. Lee Dorsett, St. Louis, Missouri; and Dr. Richard Paddock, St. Louis, Missouri. Upon motion by Dr. Robert E. Seibels, Columbia, South Carolina, seconded by Dr. Waverly R. Payne, Newport News, Virginia, it was voted that the Section go on record as seeing no reason for its participation in this national organization.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Waverly R. Payne, Newport News, Virginia.
Vice-Chairman—Dr. Frank R. Lock, Winston-Salem, North Carolina.
Secretary—Dr. E. Lee Dorsett, St. Louis, Missouri.

The Section then adjourned *sine die*.

SECTION ON UROLOGY

Officers

Chairman—Dr. I. G. Duncan, Memphis, Tennessee.
Vice-Chairman—Dr. Leo Bartels, St. Louis, Missouri.
Secretary—Dr. Jarratt P. Robertson, Birmingham, Alabama.

Thursday, November 13, 2:00 p. m.

The Section met in the Hall of Mirrors, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. I. G. Duncan, Memphis, Tennessee, who presided.

The Chairman appointed the following Nominating Committee: Dr. Samuel L. Raines, Chairman, Memphis, Tennessee; Dr. Harold P. McDonald, Atlanta, Georgia; and Dr. William M. Coppridge, Durham, North Carolina.

Dr. Grayson Carroll, St. Louis, Missouri, read a paper entitled "Hypertension of Renal Origin: Case Report" (Lantern Slides), which was discussed by Dr. Thomas D. Moore, Memphis, Tennessee; Dr. Samuel L. Raines, Memphis, Tennessee; Dr. Ray M. Bobbitt, Huntington, West Virginia; and in closing by the essayist.

Dr. Alfred Habeeb, Fairfield, Alabama, read a paper entitled "Choice of Anesthesia in Urological Surgery," which was discussed by Dr. William R. Miner, Covington, Kentucky; Dr. H. K. Turley, Memphis, Tennessee; and in closing by the essayist.

Dr. I. G. Duncan, Memphis, Tennessee, read his Chairman's Address entitled "Serious Genito-Urinary Lesions Accompanied by Essentially Negative Urinary Findings" (Lantern Slides).

Dr. Herman L. Kretschmer, President, American Medical Association, Chicago, Illinois, read a paper entitled "Some Problems on Kidney Surgery" (Lantern Slides).

Dr. Hugh J. Jewett, Baltimore, Maryland, read a paper entitled "Cancer of the Urinary Bladder: Diagnosis and Clinical Evaluation of Curability" (Lantern Slides), which was discussed by Dr. Parke G. Smith, Cincinnati, Ohio; and in closing by the essayist.

Dr. John E. Dees, Durham, North Carolina, read a paper entitled "Surgical Approach to the Lumbar Ureter and Kidney Through the Superior Lumbar Triangle" (Lantern Slides).

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Ray M. Bobbitt, Huntington, West Virginia.
Vice-Chairman—Dr. William T. Briggs, Lexington, Kentucky.
Secretary—Dr. Jarratt P. Robertson, Birmingham, Alabama.

The Section then adjourned *sine die*.

SECTION ON PROCTOLOGY

Officers

Chairman—Dr. George H. Thiele, Kansas City, Missouri.
Vice-Chairman—Dr. Victor K. Allen, Tulsa, Oklahoma.
Secretary—Dr. Tom E. Smith, Dallas, Texas.

Wednesday, November 14, 2:00 p. m.

The Section met in the Hall of Mirrors, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. George H. Thiele, Kansas City, Missouri, who presided.

Dr. Chesterfield J. Holley, Wheeling, West Virginia, read a paper entitled "History of Hemorrhoidal Surgery," which was discussed by Dr. Charles E. Howard, Cincinnati, Ohio; and Dr. Louis E. Moon, Omaha, Nebraska.

Dr. Raymond L. Murdoch, Oklahoma City, Oklahoma, read a paper entitled "Congenital Anomalies of the Terminal Large Bowel and a New Operation for Atresia Ani Vaginalis" (Lantern Slides), which was discussed by Dr. A. Gerson Carmel, Cincinnati, Ohio; and Dr. James M. McIntyre, Indianapolis, Indiana.

Dr. George H. Thiele, Kansas City, Missouri, read his Chairman's Address entitled "The Genito-Urinary Symptoms of Anorectal Disease" (Lantern Slides), which was discussed by Dr. Louis J. Hirschman, Detroit, Michigan.

The Chairman appointed the following Nominating Committee: Dr. Marion C. Pruitt, Chairman, Atlanta, Georgia; Dr. Hoyt R. Allen, Little Rock, Arkansas; and Dr. Herbert T. Hayes, Houston, Texas.

Dr. William H. Daniel, Associate Clinical Professor of Surgery, University of Southern California School of Medicine, and President, American Proctologic Society, Los Angeles, California, read a paper entitled "Metastasis and Recurrence of Carcinoma of the Colon and Rectum" (Lantern Slides).

Paper by Dr. Herbert T. Hayes, Houston, Texas, and Harry B. Burr, Houston, Texas (Commander, Medical Corps, USNR), entitled "Resume of Management of Cancer of the Rectum and Colon," was read by Dr. Hayes.

Papers by Dr. Daniel, and Drs. Hayes and Burr, were discussed by Dr. Louis J. Hirschman, Detroit, Michigan; Dr. C. Ross Deeds, Cincinnati, Ohio; and in closing by Dr. Daniel.

Dr. Marion C. Pruitt, Atlanta, Georgia, read a paper entitled "Intravenous Anesthesia in Anorectal Surgery," which was discussed by Dr. Harry E. Bacon, Philadelphia, Pennsylvania; Dr. Curtice Rosser, Dallas, Texas; Dr. Edward G. Martin, Detroit, Michigan; and Dr. Otho P. Griffin, Philadelphia, Pennsylvania.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Victor K. Allen, Tulsa, Oklahoma.
Vice-Chairman—Dr. William J. Martin, Louisville, Kentucky.
Secretary—Dr. Tom E. Smith, Dallas, Texas.

The Section then adjourned *sine die*.

SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

Officers

Chairman—Dr. J. W. Jervey, Jr., Greenville, South Carolina.
Chairman-Elect—Dr. Kate Savage Zerfoss, Nashville, Tennessee.
Vice-Chairman and Secretary—Dr. Calhoun McDougall, Atlanta, Georgia.

Wednesday, November 14, 9:00 a. m.

The Section met in Parlors A-B-C-D, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. J. W. Jervey, Jr., Greenville, South Carolina, who presided.

The Chairman appointed the following Nominating Committee: Dr. W. Raymond McKenzie, Chairman, Baltimore, Maryland; Dr. Wiley R. Buffington, New Orleans, Louisiana; and Dr. Harvey B. Searcy, Tuscaloosa, Alabama.

Dr. Gilbert E. Fisher, Birmingham, Alabama, read a paper entitled "The Use of Radium and Roentgen Rays in the Treatment of Hyperplastic Lymphoid Tissue of the Nasopharynx and Pharynx" (Lantern Slides), which was discussed by Dr. R. W. Bledsoe, Covington, Kentucky; Dr. W. W. Wilkerson, Nashville, Tennessee; Dr. Harvey B. Searcy, Tuscaloosa, Alabama; Dr. Charles E. Gillespie, Seymour, Indiana; Dr. S. M. Herron, Jackson, Tennessee; Dr. Oscar M. Marchman, Dallas, Texas; Dr. Edgar P. Cardwell, Newark, New Jersey; and in closing by the essayist.

Dr. B. Y. Alvis, St. Louis, Missouri, read a paper entitled "The Use of the Berman Locator in Removing Magnetic Intraocular Foreign Bodies," which was discussed by Dr. George M. Haik, New Orleans, Louisiana; Dr. V. R. Hurst, Longview, Texas; and in closing by the essayist.

Dr. Henry M. Goodyear, Associate Professor of Otolaryngology, University of Cincinnati College of Medicine, Cincinnati, Ohio, read a paper entitled "Modern Treatment of Mucocle of the Frontal and Ethmoidal Sinuses with Comments on the Treatment of Acute Infections of the Orbit."

Dr. Richard W. Hanckel, Charleston, South Carolina, read a paper entitled "Some Observations Concerning the Salzer Method of Treatment of Lye Burns of the Esophagus," which was discussed by Dr. Claude E. Smith, Covington, Kentucky; and in closing by the essayist.

Dr. Alston Callahan, Atlanta, Georgia (Captain, Medical Corps, AUS, Northington General Hospital, Tuscaloosa, Alabama), read a paper entitled "Surgery of War Deformities of the Eyelids" (Motion Pictures and Lantern Slides), which was discussed by Dr. Harvey B. Searcy, Tuscaloosa, Alabama; Dr. Wiley R. Buffington, New Orleans, Louisiana; and in closing by the essayist.

Dr. J. W. Jervey, Jr., Greenville, South Carolina, read his Chairman's Address entitled "Views and Reviews."

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Kate Savage Zerfoss, Nashville, Tennessee.
Chairman-Elect—Dr. Calhoun McDougall, Atlanta, Georgia.
Vice-Chairman—Dr. V. R. Hurst, Longview, Texas.
Secretary—Dr. Alston Callahan, Atlanta, Georgia.

The Section then adjourned *sine die*.

SECTION ON ANESTHESIOLOGY

Officers

Chairman—Dr. John Adriani, New Orleans, Louisiana.
Vice-Chairman—Dr. Merrill C. Beck, New Orleans, Louisiana.
Secretary—Dr. Fred E. Woodson, Tulsa, Oklahoma.

Monday, November 12, 2:00 p. m.

The Section met in the Hall of Mirrors, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. John Adriani, New Orleans, Louisiana, who read his Chairman's Address entitled "Some Practical Aspects of the Chemistry and Pharmacology of Local Anesthetics," which was discussed by Dr. Russell F. Bonham, Houston, Texas; Dr. Fred E. Woodson, Tulsa, Oklahoma; and in closing by the essayist.

The Chairman appointed the following Nominating Committee: Dr. Russell F. Bonham, Chairman, Houston, Texas; Dr. Ray T. Parmley, New Orleans, Louisiana; and Dr. Grace C. Hassler, Oklahoma City, Oklahoma.

Dr. Gerhart R. Tonn, Wichita, Kansas, read a paper entitled "Expereince with Rectal Pentothal Sodium in Obstetrics," which was discussed by Dr. Norris E. Lenahan, Columbus, Ohio; Dr. J. M. Weldon, Mobile, Alabama; and in closing by the essayist.

Dr. Sam S. Clark, Louisville, Kentucky, read a paper entitled "Review of Spinal-Pentothal Anesthesia," which was discussed by Dr. Dougal M. Dollar, Louisville, Kentucky; Dr. B. M. Carraway, Birmingham, Alabama; Dr. Sam S. Clark, Louisville, Kentucky; and Dr. John Adriani, New Orleans, Louisiana.

Dr. Ray T. Parmley, New Orleans, Louisiana, read a paper entitled "The Use of Saddle Spinal in Obstetrical Analgesia" (Lantern Slides), which was discussed by Dr. Woodard D. Beacham, New Orleans, Louisiana; Dr. Ray T. Parmley, New Orleans, Louisiana; and Dr. John Adriani, New Orleans, Louisiana.

Dr. Cecil E. Newell, Chattanooga, Tennessee, read a paper entitled "Spinal Anesthesia" (Lantern Slides), which was discussed by Dr. John Adriani, New Orleans, Louisiana; Dr. Russell F. Bonham, Houston, Texas; and in closing by the essayist.

The Nominating Committee recommended the re-election of the present officers, the recommendation of the Committee being unanimously approved by vote of Section as follows:

Chairman—Dr. John Adriani, New Orleans, Louisiana.
Vice-Chairman—Dr. Merrill C. Beck, New Orleans, Louisiana.
Secretary—Dr. Fred E. Woodson, Tulsa, Oklahoma.

The Section then adjourned *sine die*.

SECTION ON MEDICAL EDUCATION AND HOSPITAL TRAINING

Officers

Chairman—Dr. Wilburt C. Davison, Durham, North Carolina.
Vice-Chairman—Dr. Douglas H. Sprunt, Memphis, Tennessee.
Secretary—Dr. J. P. Gray, Richmond, Virginia.

Monday, November 12, 2:00 p. m.

The Section met in Parlors A-B-C-D, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Chairman, Dr. Wilburt C. Davison, Dean, Duke University School of Medicine, Durham, North Carolina, who read his Chairman's Address entitled "The German Medical Schools During the Occupation," which was discussed by Dr. E. J. van Liere, Morgantown, West Virginia; Dr. Harold P. McDonald, Atlanta, Georgia; Dr. Douglas H. Sprunt, Memphis, Tennessee; and in closing by the essayist.

Dr. W. Reece Berryhill, Dean, University of North Carolina School of Medicine, Chapel Hill, North Carolina, read a paper entitled "A Proposed Program for More Adequate Medical Care and Hospitalization in North Carolina."

Dr. William H. Kelley, Professor of Medicine, Medical College of the State of South Carolina, Charleston, South Carolina, read a paper entitled "The Expansion Program of the Medical College of the State of South Carolina."

Dr. Donald Slaughter, Dean of Students, Southwestern Foundation Medical College, Dallas, Texas, read a paper entitled "A Realistic Approach to Medical Education in the Southwest."

The Chairman appointed the following Nominating Committee: Dr. R. H. Rigdon, Chairman, Little Rock, Arkansas; Dr. William M. Coppridge, Durham, North Carolina; and Dr. M. Pinson Neal, Columbia, Mo.

Paper by Dr. C. C. Carpenter, Dean, Bowman Gray School of Medicine, Winston-Salem, North Carolina, entitled "Experiments in Medical Education and Medical Care in a New Medical School," was read by Dr. George T. Harrell, Winston-Salem, North Carolina, in the absence of Dr. Carpenter.

Paper by Dr. Roy R. Kracke and Dr. J. W. MacQueen, The Medical College of Alabama, Birmingham, Alabama, entitled "Developments in the Medical College of Alabama," was read by Dr. MacQueen.

These five papers were discussed together by Dr. M. Pinson Neal, Columbia, Missouri; Dr. Douglas H. Sprunt, Memphis, Tennessee; Dr. R. H. Rigdon, Little Rock, Arkansas; Dr. E. J. van Liere, Morgantown, West Virginia; and Dr. Edward H. Cary, Dallas, Texas.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Douglas H. Sprunt, Memphis, Tennessee.
Vice-Chairman—Dr. Donald Slaughter, Dallas, Texas.
Secretary—Dr. J. P. Gray, Richmond, Virginia.

The Section then adjourned *sine die*.

SECTION ON PUBLIC HEALTH

Officers

Chairman—Dr. Lonsdale J. Roper, Richmond, Virginia.
Vice-Chairman—Dr. John M. Whitney, New Orleans, Louisiana.
Secretary—Dr. Ben F. Wyman, Columbia, South Carolina.

Thursday, November 15, 2:00 p. m.

The Section met in the Pavillon Caprice, Netherland Plaza Hotel, Cincinnati, Ohio, and was called to order by the Vice-Chairman, Dr. John M. Whitney, New Orleans, Louisiana, who presided until after the Chairman read his Address.

Dr. Lonsdale J. Roper, Richmond, Virginia, read his Chairman's Address entitled "Some Observations on the 1944 Poliomyelitis Epidemic in Virginia."

The Chairman appointed the following Nominating Committee: Dr. E. C. Harper, Chairman, Richmond, Virginia; Dr. R. H. Hutcheson, Nashville, Tennessee; and Dr. W. K. Sharp, Jr., Richmond, Virginia.

Dr. Robert L. Bennett, Warm Springs, Georgia, read a paper entitled "Correlation of Public Health and Physical Medicine in Acute and Convalescent Poliomyelitis."

Dr. Harry S. Mustard, New York, New York, read a paper entitled "Relationship of State and Local Health Service in the Whole Program of Public Health."

Paper by Dr. E. H. Ellinwood and Dr. W. P. Jacocks, Raleigh, North Carolina, entited "North Caroina Coordinated School Health Program," was read by Dr. Ellinwood and was discussed by Miss Gertrude Bush, Columbus, Ohio; Dr. C. A. Wilzbach, Cincinnati, Ohio; Dr. Felix J. Underwood, Jackson, Mississippi; and in closing by Dr. Ellinwood.

Paper by Dr. George A. Denison, Birmingham, Alabama, and Dr. W. H. Y. Smith, Montgomery, Alabama, entitled "Mass Venereal Disease Control in an Urban Area: Report of a Demonstration" (Lantern Slides), was read by Dr. Denison and was discussed by Dr. Eugene A. Gillis, Washington, District of Columbia; Dr. Ben F. Wyman, Columbia, South Carolina; Dr. John M. Whitney, New Orleans, Louisiana; Dr. S. C. Tatum, Center, Alabama; and in closing by Dr. Denison.

Paper by Dr. G. E. McDaniel, Columbia, South Carolina, and Mr. F. M. Hemphill, Atlanta, Georgia, entitled "Summary of Seven Years' Thick Film Blood Smear Surveys for Malaria in South Carolina" (Lantern Slides), was read by Dr. McDaniel and was discussed by Dr. R. B. Watson, Memphis, Tennessee.

The Nominating Committee reported the following nominations for the Section officers, the nominees being duly elected by vote of the Section:

Chairman—Dr. Ben F. Wyman, Columbia, South Carolina.
Vice-Chairman—Dr. George A. Dame, Jacksonville, Florida.
Secretary—Dr. R. E. Fox, Raleigh, North Carolina.

The Section then adjourned *sine die*.

AMERICAN PUBLIC HEALTH ASSOCIATION
Southern Branch

Meeting conjointly with Southern Medical Association

Officers

President—Dr. R. H. Hutcheson, Nashville, Tennessee.
First Vice-President—Dr. Gradie R. Rowntree, Louisville, Kentucky.
Second Vice-President—(Mr.) John H. O'Neill, New Orleans, Louisiana.
Third Vice-President—(Miss) Mary D. Osborn, R.N., Jackson, Mississippi.
Secretary-Treasurer—Dr. John W. Williams, Jr., Jefferson City, Missouri.

Wednesday, November 14, 2:00 p. m.

The first session of the thirteenth annual meeting of the American Public Health Association, Southern Branch, convened at the Sinton Hotel, Rookwood Room, Cincinnati, and was called to order by the President, Dr. R. H. Hutcheson, who presided.

The President appointed the following Nominating Committee: Dr. Carl V. Reynolds, Chairman, Raleigh, North Carolina; Dr. Ben F. Wyman, Columbia, South Carolina; and Dr. Felix J. Underwood, Jackson, Mississippi.

At this session were presented (1) the address of the President entitled "Tuberculosis Program in Tennessee" and (2) a symposium on "Content of the Public Health Services in the Post-War Transition Period."

Thursday, November 13, 9:00 a. m.

The second session convened at the Sinton Hotel, Rookwood Room, Cincinnati, and was called to order by the President, Dr. R. H. Hutcheson, who presided.

An excellent and practical scientific program was presented.

The Nominating Committee reported the following nominations for officers, the nominees being duly elected by vote of the Association:

President—Dr. W. K. Sharp, Jr., U. S. Public Health Service, Regional Consultant, District No. 2 Headquarters, Richmond, Virginia.
First Vice-President—Dr. George A. Denison, Birmingham and Jefferson County Health Officer, Birmingham, Alabama.
Second Vice-President—(Mr.) J. M. Jarrett, Director of Public Health Engineering, Raleigh, North Carolina.
Third Vice-President—(Mrs.) Abbie Weaver, R.N., Director of Public Health Nursing, State Board of Health, Atlanta, Georgia.
Secretary-Treasurer—Dr. John W. Williams, Jr., State Director of Local Health, State Board of Health, Jefferson City, Missouri.

Thursday, November 13, 12:30 noon

The annual meeting of the Governing Council was held at a luncheon at the Sinton Hotel, Ohio Room, Cincinnati, and was called to order by the President, Dr. R. H. Hutcheson, who presided.

The financial report of the Secretary-Treasurer was given and approved. The motion was made by Dr. Underwood that $150.00 be allowed the Secretary to be used in meeting expenses of the meeting and other expenses of the secretary's office. The motion was seconded and carried.

There was considerable discussion concerning the next annual meeting. It was decided that the President, Secretary and Member of Regional Advisory Board (Dr. Felix J. Underwood, Executive Officer, Mississippi State Board of Health, Jackson, Mississippi) confer with representatives of the Southern Medical Association relative to a continuation of the conjoint meeting of the Southern Branch, A.P.H.A., and the Southern Medical Association with special reference to the most acceptable day for the meeting of the Public Health Nursing Section and the Sanitary Engineers' and Sanitary Officers' Section.

The Council then adjourned.

AMERICAN COLLEGE OF CHEST PHYSICIANS
Southern Chapter

Meeting conjointly with Southern Medical Association

Officers

President—Dr. Alvis E. Greer, Houston, Texas.
First Vice-President—Dr. Carl C. Aven, Atlanta, Georgia.
Second Vice-President—Dr. Paul A. Turner, Louisville, Kentucky.
Secretary-Treasurer—Dr. Benjamin L. Brock, Waverly Hills, Kentucky.

Monday, November 12

The American College of Chest Physicians, Southern Chapter, had two Scientific Sessions at the Gibson Hotel, Cincinnati, 9:00 a. m. and 2:00 p. m. At the morning session Dr. David W. Heusinkveld, Cincinnati, presided, and there were three scientific papers with discussions. At the afternoon session Dr. H. I. Spector, St. Louis, Missouri, presided, and there were four scientific papers with discussion.

The business meeting was held as a luncheon at the Gibson Hotel, Dr. Alvis E. Greer, President, Houston, Texas, presiding.

Officers elected at the business meeting were:

President—Dr. Carl C. Aven, Atlanta, Georgia.
First Vice-President—Dr. Paul A. Turner, Louisville, Kentucky.
Second Vice-President—Dr. Herbert L. Mantz, Kansas City, Missouri.
Secretary-Treasurer—Dr. Benjamin L. Brock, Waverly Hills, Kentucky.

The annual dinner was held Monday evening at the Gibson Hotel, Dr. Charles M. Hendricks, President, American College of Chest Physicians, El Paso, Texas, presiding.

Dr. Alvis E. Greer, President, Houston, Texas, gave his President's Address entitled "The College—Yesterday, Today and Tomorrow."

The Southern Chapter concluded its activities with an X-Ray Conference held Monday evening at the Gibson Hotel.

AMERICAN THERAPEUTIC SOCIETY

Meeting conjointly with Southern Medical Association

Officers

President—Dr. E. Sterling Nichol, Miami, Florida.
Vice-Presidents—Dr. Thomas J. Coogan, Chicago, Illinois; Dr. James K. Fancher, Atlanta, Georgia; and Dr. Charles L. Hartsock, Cleveland, Ohio.
Secretary—Dr. Oscar B. Hunter, Washington, D. C.
Treasurer—Dr. Daniel L. Sexton, St. Louis, Missouri.
Editor—Dr. Francis M. Pottenger Jr., Monrovia, California.
Historian—Dr. William J. Mallory, Washington, D. C.

Council—Dr. W. Wayne Babcock, Chairman, Philadelphia, Pennsylvania; Dr. Henry H. Turner, Vice-Chairman, Oklahoma City, Oklahoma; Dr. Oscar B. Hunter, Secretary, Washington, D. C.; Dr. William V. Watson, Toronto, Canada; Dr. James L. Mudd, St. Louis, Missouri; Dr. Gjermund Hoyme, Eau Claire, Wisconsin; Dr. Thomas J. Coogan, Chicago, Illinois; Dr. Walter E. Vest, Huntington, West Virginia; Dr. Harvey G. Beck, Baltimore, Maryland; Dr. Harold S. Davidson, Atlantic City, New Jersey; Dr. A. Wilbur Duryee, New York, New York; Dr. E. Sterling Nichol, Miami, Florida; Dr. Reginald Higgons, Port Chester, New York; Dr. Francis M. Pottenger, Monrovia, California; and Dr. Edwin C. Hamblen, Durham, North Carolina.

Committee on Admissions—Dr. Harold S. Davidson, Chairman, Atlantic City, New Jersey; Dr. Thomas J. Coogan, Chicago, Illinois; and Dr. Wm. Bryant Rawls, New York, New York.

Committee on Program—Dr. E. Sterling Nichol, Miami, Florida; Dr. Francis M. Pottenger Jr., Monrovia, California; and Dr. Oscar B. Hunter, Washington, D. C.

The American Therapeutic Society, upon invitation of the Southern Medical Association, met conjointly with the Association at Cincinnati, Netherland Plaza Hotel, November 11-12.

Sunday, November 11

Informal get-together dinner with entertainment, Parlors A-B-C-D, 7:00 p. m., followed by meeting of the Council and Committee on Admissions, Parlor I, 8:00 p. m.

Monday, November 12

Breakfast meeting with Chairman of Council, Parlor J, 8:00 a. m.

Business meeting, Parlors E-F, 9:00 a. m., the President, Dr. E. Sterling Nichol, presiding. An address of welcome was given by Dr. James A. Ryan, Past President, Southern Medical Association, Covington, Kentucky, which was responded to by the President, Dr. Nichol. Report of the Secretary, Report of Treasurer, Report of Editor, Report of Committee on Admissions, Election of Members, Presentations of Fellowships, and Obituaries were given at this business meeting.

At a scientific session immediately following the business meeting, Dr. Thomas J. Coogan, Vice-President, Chicago, Illinois, presiding, six scientific papers were presented. There was a meeting of the Council as a luncheon following the scientific session.

At a scientific session, Parlors E-F, 2:00 p. m., Dr. James K. Fancher, Vice-President, Atlanta, Georgia, presiding, eight scientific papers were presented.

At a business meeting following the scientific session, the President, Dr. E. Sterling Nichol, presiding, there were the Report of Committees, Report of Council, Election of Officers, Unfinished Business and New Business. The officers elected were:

President—Dr. Joseph F. Borg, St. Paul, Minnesota.
Vice-Presidents—Dr. Wm. Bryant Rawls, New York, New York; Dr. Lucien A. LeDoux, New Orleans, Louisiana; and Dr. Nathan S. Davis III, Chicago, Illinois.
Secretary—Dr. Oscar B. Hunter, Washington, D. C.
Treasurer—Dr. Daniel L. Sexton, St. Louis, Missouri.
Editor—Dr. Francis M. Pottenger, Jr., Monrovia, California.
Historian—Dr. William J. Mallory, Washington, D. C.
Council—Dr. W. Wayne Babcock, Chairman, Philadelphia, Pennsylvania; Dr. Henry H. Turner, Vice-Chairman, Oklahoma City, Oklahoma; Dr. Oscar B. Hunter, Secretary, Washington, D. C.; Dr. Francis M. Pottenger, Monrovia, California; Dr. Edwin C. Hamblen, Durham, North Carolina; Dr. Hal McC. Davison, Atlanta, Georgia; Dr. James L. Mudd, St. Louis, Missouri; Dr. Gjermund Hoyme, Eau Claire, Wisconsin; Dr. Thomas J. Coogan, Chicago, Illinois; Dr. Walter E. Vest, Huntington, West Virginia; Dr. Harvey G. Beck, Baltimore, Maryland; Dr. Harold S. Davidson, Atlantic City, New Jersey; Dr. A. Wilbur Duryee, New York, New York; Dr. E. Sterling Nichol, Miami, Florida; and Dr. Reginald Higgons, Port Chester, New York.
Committee on Admissions—Dr. Harold S. Davidson, Chairman, Atlantic City, New Jersey; Dr. Thomas J. Coogan, Chicago, Illinois; and Dr. Wm. Bryant Rawls, New York, New York.
Committee on Program—Dr. Joseph F. Borg, St. Paul, Minnesota; Dr. Francis M. Pottenger, Jr., Monrovia, California; and Dr. Oscar B. Hunter, Washington, D. C.

The annual banquet was held in Parlors A-B-C-D, 8:00 p. m., Dr. W. Wayne Babcock, Chairman of the Council, Philadelphia, Pennsylvania, presiding. Dr. E. Sterling Nichol made a short talk in lieu of a formal Presidential Address. Dr. Alphonse McMahon, Commodore, Medical Corps, U. S. Navy, Washington, D. C., showed motion pictures with discussion of his trip to Potsdam as a member of President Truman's party.

AMERICAN SOCIETY OF TROPICAL MEDICINE

Meeting conjointly with Southern Medical Association

Officers

President—Dr. Rolla E. Dyer, Washington, D. C.
President-Elect—Dr. James S. Simmons, Washington, D. C.
Vice-President—Dr. Paul F. Russell, Washington, D. C.
Secretary-Treasurer—Dr. Joseph S. D'Antoni, New Orleans, La.
Editor—Dr. Charles F. Craig, San Antonio, Tex.

The forty-second annual meeting of the American Society of Tropical Medicine was held in Cincinnati, November 12-15, with headquarters and scientific meetings at the Gibson Hotel. The meeting was held, as usual, during the thirty-ninth annual meeting of the Southern Medical Association. As in the past, the Society held a joint scientific session with the National Malaria Society, and the members of the Society were guests of the American Academy of Tropical Medicine at their annual dinner.

Three scientific sessions of the Society were held Tuesday morning, Wednesday afternoon and Thursday forenoon. Thirty-three papers were listed on the program, of which four were read by title.

All sessions were well attended, more than 125 members being present at some of the meetings. The Society now has a total number of 1309 members, as compared to 1213 at this time last year.

SCIENTIFIC SESSIONS

The first three papers at the opening scientific session were devoted to the educational aspects of tropical medicine. The rest of the session was devoted primarily to the problems of tropical medicine in the war and the importation of tropical diseases. The highlight of this session was the Tenth Charles Franklin Craig Lecture on Tropical Medicine, entitled "Lessons in Malariology from World War II" presented by Dr. Paul F. Russell, Washington, D. C.

At the joint meeting with the National Malaria Society, which was held Wednesday morning, ten papers were presented on malaria. The contributions covered both experimental and clinical phases.

The second session of the Society was devoted primarily to two tropical disease problems; namely, scrub typhus and cutaneous diphtheria. The highlight of this session was the presentation of the Bailey K. Ashford Award to Dr. James Watt, Surgeon, U. S. Public Health Service, New Orleans, Louisiana.

The third scientific session covered helminthic diseases. Most of the papers stressed the etiology, symptomatology, diagnosis and treatment of two helminthic problems as a result of the war, namely, filariasis and schistosomiasis.

BUSINESS SESSIONS

The annual business meeting of the Officers and Councilors of the Society was held on Tuesday, November 13, at a luncheon at 12:30 p. m.

All of the Officers and Councilors were in attendance at the meeting except Dr. L. T. Coggeshall, Dr. A. J. Warren, Dr. G. R. Callender and Dr. E. G. Hakansson. Dr. H. C. Clark, Panama Canal Zone, a former president of the Society, also attended the meeting.

At the brief business session held at noon on Thursday, the Officers and Councilors nominated at the annual luncheon of the Officers and Councilors were elected. The newly elected officers are:

President—Dr. James S. Simmons, Washington, D. C.
President-Elect—Dr. Edward I. Salisbury, New York, N. Y.
Vice-President—Dr. Joseph S. D'Antoni, New Orleans, Louisiana.
Secretary-Treasurer—Dr. Norman H. Topping, Washington, D. C.
Editor—Dr. Charles F. Craig, San Antonio, Texas.
Councilors—Dr. J. Andrews, Atlanta, Georgia; Dr. M. E. Barnes, Iowa City, Iowa; Dr. G. R. Callender, Washington, D. C.; Dr. E. G. Hakansson, Washington, D. C.; Dr. J. F. Kessel, Los Angeles, California; Dr. O. R. McCoy, Washington, D. C.; Dr. P. F. Russell, Washington, D. C.; and Dr. R. B. Watson, Memphis, Tennessee.

Also, the Committee on Post-War Tropical Medicine proposed four resolutions which, it was felt, would greatly aid in the study of tropical diseases in this country. These resolutions were:

(1) That the Society encourage the biological laboratories to make certain diagnostic antigens commercially available in order to assist physicians at large in the diagnosis of tropical diseases;

(2) That the Secretary of the Society be instructed to notify the Veterans Administration of the past action of the Society and the resulting opportunities for the training of personnel in tropical diseases at the Public Health Services Center in Atlanta, Georgia;

(3) That the Secretary of the Society be instructed to inform the Public Health Services Training Center in Atlanta, Georgia, that it is the opinion of the Society that introduction of *Ancylostoma duodenale* by returning military personnel is a definite possibility. Further, to recommend that the training center take suitable steps for the dissemina-

tion of this and other pertinent information concerning infection with this organism to public health agencies and practicing physicians; and

(4) That the Society strongly recommends that the government of the United States aid in fostering suitable places in the tropics for training in tropical diseases and where research in this specific field may be accomplished.

The following resolutions were presented and passed unanimously:

(1) *Whereas*, the American Society of Tropical Medicine continues to enjoy the privilege of association with the Southern Medical Association; and

Whereas, the meetings of the Society have been made more effective and profitable through the efficient cooperation of the Secretary-Manager of the Southern Medical Association;

Therefore, be it resolved that the American Society of Tropical Medicine express its gratitude and appreciation to the Southern Medical Association and especially to its Secretary-Mangner, Mr. C. P. Loranz.

(2) *Whereas*, the 1945 annual meeting of the American Society of Tropical Medicine in Cincinnati has been a pleasant and profitable occasion; and

Whereas, the success of the meeting has depended in large measure upon the hospitable arrangements made by the host Society;

Therefore, be it resolved that the American Society of Tropical Medicine express its appreciation to the Kenton-Campbell County Medical Society, and in particular to Dr. George N. Burger and Dr. Howard Molony.

HOSPITALITY SESSIONS AND OTHER SOCIAL EVENTS

Well attended hospitality group sessions were held on Monday, Tuesday and Wednesday in the late afternoon. Informal talks were made on Tuesday by Dr. C. Larrimore on the education of the GI in personal hygiene against tropical diseases, and on Wednesday, Dr. Ernest Carroll Faust discussed his trip to Leyte as head of the Commission on Schistosomiasis.

The annual luncheon of the Society was held on Wednesday at noon, with 115 persons in attendance. Dr. Rolla E. Dyer, Washington, D. C., delivered his President's Address entitled "Medical Research in the Post-War Period," at this luncheon meeting.

AMERICAN ACADEMY OF TROPICAL MEDICINE

Meeting conjointly with American Society of Tropical Medicine

Officers

President—Dr. Mark F. Boyd, Tallahassee, Florida.
Vice-President—Dr. George W. McCoy, New Orleans, La.
Secretary—Dr. Ernest Carroll Faust, New Orleans, La.
Treasurer—Dr. Thomas T. Mackie, Washington, D. C.

The American Academy of Tropical Medicine held its twelfth annual meeting at Cincinnati on November 14. At the dinner session, Dr. Edmund V. Cowdry, St. Louis, Missouri, presided as toastmaster and Dr. Mark F. Boyd, Tallahassee, Florida, delivered the Presidential Address entitled, "International Appraisal of Tropical Medicine." Dr. Leon A. Fox, M. C., U.S.A.; Dr. Clay G. Huff, University of Chicago, Chicago, Illinois; Dr. Henry Pinkerton, St. Louis University, St. Louis, Missouri; Dr. Paul W. Wilson, M. C., U.S.N., and Dr. Willard H. Wright, National Institute of Health, Bethesda, Maryland, were elected to membership. The following officers were elected for the coming year:

President—Dr. James S. Simmons, Brigadier General, Medical Corps, U. S. Army, Office of the Surgeon General, Washington, D. C.
Vice-President—Dr. George K. Strode, Rockefeller Foundation, New York, N. Y.
Secretary and Assistant Treasurer—Dr. Ernest Carroll Faust, Professor of Parasitology and Acting Head of Department of Tropical Medicine, Tulane University School of Medicine, New Orleans, Louisiana.
Treasurer—Dr. Thomas T. Mackie, Colonel, Medical Corps, A.U.S., Office of the Surgeon General, Washington, D. C.
Councilor for five-year term—Dr. L. T. Coggeshall, Medical Corps, U. S. Naval Reserve, Ann Arbor, Michigan.
Councilor for three-year term—Dr. Karl F. Meyer, Hooper Foundation, San Francisco, California.

NATIONAL MALARIA SOCIETY

Meeting conjointly with Southern Medical Association

Officers

Honorary President—(Mr.) J. A. LePrince, Memphis, Tennessee.
President—(Mr.) H. A. Johnson, Memphis, Tennessee.
President-Elect—Dr. Mark F. Boyd, Tallahassee, Florida.
Vice-President—Dr. Clay G. Huff, Chicago, Illinois.
Secretary-Treasurer—Dr. Mark F. Boyd, Tallahassee, Florida.

Tuesday, November 13, 9:00 a. m.

The National Malaria Society convened for its twenty-eighth annual meeting at the Gibson Hotel, Rookwood Room, Cincinnati, and was called to order by the President, Mr. H. A. Johnson, who presided.

For this, the initial scientific session, a program of thirteen contributed papers had been prepared. Of this number, however, three were, owing to the absence of their authors, presented by title.

Tuesday, November 13, 2:00 p. m.

The Society reconvened at the Gibson Hotel, Rookwood Room for a business session and was called to order by the President, Mr. Johnson, who presided.

Minutes of the 1944 meeting were approved as printed in the March 1945 issue of the Journal of the Society.

The Secretary-Treasurer reported a total of 445 members, a net gain of 30 for the year; and cash on hand of $4,876.46. The Report of the Secretary-Treasurer was referred to an Auditing Committee composed of Dr. Martin D. Young, Mr. John L. Porter and Mr. C. C. Kiker.

Reports were received from the Committee on Medical Research and Committee on Revision of Constitution and By-Laws.

The meeting adjourned at 5:30 p. m.

Wednesday, November 14, 9:00 a. m.

A joint session of the National Malaria Society and the American Society of Tropical Medicine convened in the Gibson Hotel, Roof Garden, Cincinnati, Mr. H. A. Johnson, Memphis, Tennessee, President, National Malaria Society, and Dr. Rolla E. Dyer, Washington, D. C., President, American Society of Tropical Medicine, presiding.

A program of twelve scientific papers was presented.

The Society then adjourned.

Wednesday, November 14, 2:00 p. m.

The National Malaria Society met in the Gibson Hotel, Parlor H, Cincinnati, and was called to order by the President, Mr. H. A. Johnson, who presided.

The Resolutions Committee, to whom was referred the report of the Committee on Revision of the Constitution and By-Laws, made their report, the Society taking the following action: *Whereas*, the report of the Committee to study the constitution and by-laws had been considered, freely discussed and amended by the Society during a two-day session, the Committee on Resolutions recommends that the report as revised be recommended to the Society for final approval and adoption at the next annual meeting, and that copies of the amended report be distributed to the members prior to that time.

Dr. Felix J. Underwood, Jackson, Mississippi, introduced the following resolutions which by motion were adopted:

(1) Expressing the thanks of the Society to the special Committee on the Revision of the Constitution and By-Laws for their excellent work.

(2) Expressing sympathy and condolence to the widows of Colonel W. N. Bispham and Mr. R. C. Shannon, directing their transmission by the Secretary-Treasurer.

(3) Expressing appreciation and thanks to Dr. Mark F. Boyd, retiring Secretary-Treasurer for his long and valued services in this office.

(4) Directing the Secretary-Treasurer to suitably express the appreciation and thanks of the Society to the management of the Southern Medical Association and the Campbell-Kenton County Medical Society for their hospitality and the

facilities enjoyed; and to the management of the Sinton and Gibson Hotels for similar courtesies.

Reports were received from the Committees on Engineering, Industrial Relations, Entomology, Epidemiology, Statistics, and from the Editorial Board.

The Auditing Committee reported that their examination of the report of the Secretary-Treasurer found it to be in accordance with his books, and introduced a motion for the acceptance of these reports, and recommended an honorarium of $100.00 to the Secretary of the Secretary-Treasurer, which was adopted.

The Secretary then presented a communication from the American Academy of Tropical Medicine, requesting that the Society adopt a resolution petitioning the State Department to sponsor an International Congress on Tropical Medicine and Malaria at an early date in the United States, and that the President of the Society appoint a member to serve on the organizing committee of such a congress. A motion was adopted supporting this proposal.

Mr. G. H. Bradley for the Nominating Committee proposed the following for officers for 1945, these nominees being duly elected by the Society:

Honorary President—(Mr.) J. A. LePrince, Memphis, Tennessee.
President—Dr. Mark F. Boyd, Tallahassee, Florida.
President-Elect—(Mr.) Mark D. Hollis, Atlanta, Georgia.
Vice-President—(Mr.) J. A. Mulrennan, Jacksonville, Florida.
Secretary-Treasurer—Dr. Martin D. Young, Columbia, South Carolina.

There being no further business, the meeting adjourned *sine die*.

WOMAN'S AUXILIARY

Woman's Auxiliary to the Southern Medical Association

Officers

President—Mrs. John Pierpont Helmick, Fairmont, West Virginia.
President-Elect—Mrs. W. W. Potter, Concord, Tennessee.
First Vice-President—Mrs. Joseph E. Wier, Louisville, Kentucky.
Second Vice-President—Mrs. Eugene G. Peek, Ocala, Florida.
Corresponding Secretary—Mrs. H. V. Thomas, Clarksburg, West Virginia.
Recording Secretary—Mrs. R. C. Haynes, Marshall, Missouri.
Treasurer—Mrs. S. J. Wolferman, Fort Smith, Arkansas.
Historian—Mrs. Olin S. Cofer, Atlanta, Georgia.
Parliamentarian—Mrs. H. Leslie Moore, Dallas, Texas.

Standing Committees

Custodian of Records—Mrs. William Hibbitts, Chairman, Texarkana, Texas.
Research and Romance of Medicine—Mrs. Harvey F. Garrison, Chairman, Jackson, Mississippi.
Resolutions—Mrs. H. W. Rogers, Chairman, Norfolk, Virginia.
Jane Todd Crawford—Mrs. Luther Bach, Chairman, Florence, Kentucky.
Budget—Mrs. L. W. Roe, Chairman, Mobile, Alabama.
Memorial—Mrs. U. G. McClure, Charleston, West Virginia.
Doctors' Day—Mrs. Leonard Rush Massengale, Chairman, Lumpkin, Georgia.
Wartime Service—Mrs. James N. Brawner, Sr., Chairman, Atlanta, Georgia.

Monday, November 12, 2:30 p. m.

The Executive Board of the Woman's Auxiliary to the Southern Medical Association met in the Netherland Plaza Hotel, Parlor J, Cincinnati. Twenty-two members were present. The President, Mrs. John Pierpont Helmick, Fairmont, West Virginia, presided, and brought greetings to the group.

Mrs. U. G. McClure, Charleston, West Virginia, gave the invocation.

Minutes of the Post-Convention Board meeting of 1943 at Cincinnati, Ohio, were read and approved.

Report of the Treasurer of the General Fund showed a balance of $491.08. Mrs. Richard H. Clark, Hattiesburg, Mississippi, and Mrs. E. H. Greene, Atlanta, Georgia, were appointed to audit the report and books of the Treasurer. Mrs. Clark moved that the Executive Board recommend to the Budget Committee that $250.00 from the Treasury be put into the Jane Todd Crawford Fund. Motion seconded and carried.

Report of Treasurer of the Jane Todd Crawford Fund showed United States War Bonds to the amount of $1,813.00 and cash in bank of $4.65, total of fund $1,817.65.

The President appointed the following to serve on the Budget Committee: Mrs. J. Ullman Reaves, Chairman, Mobile, Alabama; Mrs. Wm. Weston, Jr., Columbia, South Carolina; and Mrs. Olin S. Cofer, Atlanta, Georgia.

Brief reports were given by the Officers, Chairmen of Standing Committees and the State Councilors.

Nominations were made for the Nominating Committee and the following were elected to serve: Mrs. E. C. Parker, Chairman, Gulfport, Mississippi; Mrs. A. A. Herold, Shreveport, Louisiana; Mrs. M. Pinson Neal, Columbia, Missouri; and Mrs. H. E. Christenberry, Sr., Knoxville, Tennessee.

The following recommendations were made to be presented to the members of the Auxiliary at their annual meeting on Tuesday:

(1) That the Jane Todd Crawford Memorial Fund to be used as a loan to help medical students or physicians from the South, desiring to do post-graduate work in gynecology, the said students or physicians to be recommended by the Dean of the Medical School of which they are in attendance, or by the local medical society, of which they are a member, and approved by a Committee of three elected by the Executive Board of the Woman's Auxiliary to the Southern Medical Association.

(2) That the Woman's Auxiliary send a note of thanks and appreciation to the Filson Club of Louisville, Kentucky, for keeping the records of this organization over a period of years.

(3) That a Committee be appointed to inspect and to condense the records of this organization and report their work to the President, the Committee, to be composed of Mrs. A. T. McCormack, Chairman, Mrs. Stephen McCoy, and Mrs. Grace Stroud Fries, all of Louisville, Kentucky.

(4) That a note be sent from the Woman's Auxiliary to Mrs. Grace Stroud Fries, congratulating her on her recent marriage.

(5) That a note of sympathy be sent to the Treasurer, Mrs. S. J. Wolferman, Fort Smith, Arkansas, upon the death of Dr. Wolferman.

The meeting of the Executive Board then adjourned.

Tuesday, November 13, 9:30 a. m.

The Auxiliary met at the Netherland Plaza Hotel, Parlors E-F, Cincinnati, the President, Mrs. John Pierpont Helmick, presiding.

Mrs. Joseph Wier, Louisville, Kentucky, welcomed the members and guests.

Mrs. U. G. McClure, Charleston, West Virginia, gave the invocation.

Reports were given by the Officers, Chairmen of Standing Committees and the State Councilors. Reports of the absent Councilors were filed without reading.

Mrs. J. Ullman Reaves, Chairman of the Budget Committee, presented the budget for $250.00 and approval of the recommendation from the Executive Board that $250.00 from the Treasury be put into the Jane Todd Crawford Fund. The budget with the recommendation was adopted.

Mrs. U. G. McClure, Charleston, West Virginia, conducted the "In Memoriam" service and read the names of deceased members for 1944-45.

Announcement was made that the flowers on the presiding officers' table had been placed there by Dr. Seale Harris, Birmingham, Alabama, in memory of his wife.

Mrs. Luther Bach, Chairman, Credentials Committee, reported 166 registrations.

Recommendations (1), (2), (3), (4) and (5) from the Executive Board were adopted.

The Nominating Committee presented the following for officers for 1945-1946, the nominees being duly elected:

President—Mrs. W. W. Potter, Concord, Tennessee.
President-Elect—Mrs. W. R. Buffington, New Orleans, Louisiana.
First Vice-President—Mrs. W. W. Crawford, Hattiesburg, Mississippi.

Second Vice-President—Mrs. R. C. Haynes, Marshall, Missouri.
Treasurer—Mrs. W. A. Selman, Atlanta, Georgia.
Recording Secretary—Mrs. Philip E. Blackerby, Louisville, Kentucky.
Corresponding Secretary—Mrs. H. E. Christenberry, Sr., Knoxville, Tennessee.
Parliamentarian—Mrs. John Pierpont Helmick, Fairmont, West Virginia.
Historian—Mrs. William Hibbitts, Texarkana, Texas.

Mrs. M. Pinson Neal, Columbia, Missouri, a Past-President, in a brief service installed the new officers.

Mrs. Helmick presented the gavel to the new President, Mrs. W. W. Potter, Concord, Tennessee, who gave her inaugural address.

The Auxiliary meeting then adjourned *sine die*.

Tuesday, November 13

The Post-Convention Board meeting was held immediately following the conclusion of the general session at the Netherland Plaza Hotel, Cincinnati, Mrs. W. W. Potter, President, Concord, Tennessee, presiding.

The President announced the following Chairmen of Standing Committees (all are members of the Executive Board):

Custodian of Records—Mrs. Grace Stroud Fries, Louisville, Kentucky.
Research and Romance of Medicine—Mrs. U. G. McClure, Charleston, West Virginia.
Resolutions—Mrs. H. Leslie Moore, Dallas, Texas.
Jane Todd Crawford—Mrs. Luther Bach, Florence, Kentucky.
Budget—Mrs. Olin S. Cofer, Atlanta, Georgia.
Memorial—Mrs. Frank N. Haggard, San Antonio, Texas.
Doctors' Day—Mrs. E. C. Parker, Gulfport, Mississippi.

The President announced the following appointment of Councilors for a term of three years—Expire 1948 (all are members of the Executive Board):

Kentucky—Mrs. Wm. McDaniel Ewing, Louisville.
Louisiana—Mrs. George J. Taquino, New Orleans.
Mississippi—Mrs. B. B. Philpot, Tupelo.
Missouri—Mrs. George H. Thiele, Kansas City.
North Carolina—Mrs. Clyde R. Hedrick, Lenoir.

The following were elected to serve on the Committee in re the Jane Todd Crawford Memorial Fund as provided in Recommendation (1) from the Executive Board: Mrs. A. T. McCormack, Chairman, Louisville, Kentucky; Mrs. Oscar M. Marchman, Dallas, Texas; and Mrs. J. Ullman Reaves, Mobile, Alabama.

The Executive Board meeting then adjourned.

COUNCIL, Woman's Auxiliary to the Southern Medical Association
(All are members of the Executive Board)

Expire 1946—
Oklahoma—Mrs. Joseph W. Kelso, Oklahoma City
South Carolina—Mrs. William Weston, Jr., Columbia.
Tennessee—Mrs. A. R. Porter, Jr., Memphis.
Texas—Mrs. S. F. Harrington, Dallas.
Virginia—Mrs. E. Latane Flanagan, Richmond.
West Virginia—Mrs. Welch England, Parkersburg.

Expire 1947—
Alabama—Mrs. O. R. Grimes, Gadsden.
Arkansas—Mrs. L. G. Fincher, El Dorado.
District of Columbia—Mrs. Oscar B. Hunter, Washington.
Florida—Mrs. F. W. Kreuger, South Jacksonville.
Georgia—Mrs. Edgar H. Greene, Atlanta.

PAST PRESIDENTS, Woman's Auxiliary to the Southern Medical Association
(All are members of the Executive Board)

1925, Mrs. E. H. Cary, Dallas, Texas.
1926, Mrs. D. J. Williams, Long Beach, Mississippi.
1927, Mrs. Oscar M. Marchman, Dallas, Texas.
1928, Mrs. Arthur T. McCormack, Louisville, Kentucky.
1929, Mrs. C. W. Garrison, Little Rock, Arkansas.
1930, Mrs. James N. Brawner, Sr., Atlanta, Georgia.
1931, Mrs. S. A. Collom, Sr., Texarkana, Texas.
1932, Mrs. Chas. E. Oates, North Little Rock, Arkansas.
1933, Mrs. Arthur A. Herold, Shreveport, Louisiana.
1934, Mrs. Southgate Leigh, Norfolk, Virginia.
1935, Mrs. J. Bonar White (deceased), Atlanta, Georgia.
1936, Mrs. Oliver W. Hill, Knoxville, Tennessee.
1937, Mrs. Frank N. Haggard, San Antonio, Texas.
1938, Mrs. Luther Bach, Florence, Kentucky.
1939, Mrs. W. K. West, Oklahoma City, Oklahoma.
1940, Mrs. Charles P. Corn, Greenville, South Carolina.
1941, Mrs. M. Pinson Neal, Columbia, Missouri.
1942, Mrs. J. Ullman Reaves, Mobile, Alabama.
1943, Mrs. Richard H. Clark, Hattiesburg, Mississippi.
1944-1945, Mrs. John Pierpont Helmick, Fairmont, West Virginia.

TECHNICAL EXHIBITS

Netherland Plaza Hotel, Fourth Floor

Here follow the names of the firms who had exhibits at the Cincinnati meeting and their space number:

	Space No.
Abbott Laboratories, North Chicago, Ill.	5—6
Aloe Company, A. S., St. Louis, Mo.	17—18
American Hospital Supply Corporation, Chicago, Ill.	—52
American Optical Company, Southbridge, Mass.	38—39
Ames Company, Inc., Elkhart, Ind.	26—27
Armour Laboratories, The, Chicago, Ill.	33—34
Ayerst, McKenna and Harrison, Ltd., New York, N. Y.	47
Bard-Parker Company, Inc., Danbury, Conn.	65
Bilhuber-Knoll Corporation, Orange, N. J.	28
Borden Company, Inc., The, New York, N. Y.	32
Burdick Corporation, The, Milton, Wis.	49
Burroughs Welcome and Co., Inc., New York, N. Y.	55
Carnation Company, Oconomowoc, Wis.	15
Ciba Pharmaceutical Products, Inc., Summit, N. J.	11
Davis and Geck, Inc., Brooklyn, N. Y.	12
Doho Chemical Corporation, The, New York, N. Y.	56
Eastman Kodak Company, Rochester, N. Y.	35
Fairchild Brothers and Foster, New York, N. Y.	46
General Electric X-Ray Corporation, Chicago, Ill.	1
Gradwohl Laboratories, St. Louis, Mo.	53
Hoffmann-LaRoche, Inc., Nutley, N. J.	22
Horlick's Malted Milk Corporation, Racine, Wis.	58
Kelley-Koett Manufacturing Co., The, Covington, Ky.	20—21
Kinney and Sons, H. W., Inc., Columbus, Ind.	23
Knox Gelatine Company, Chas. B., Johnstown, N. Y.	10
Lea and Febiger, Philadelphia, Pa.	71
Lilly and Company, Eli, Indianapolis, Ind.	40
Lippincott Company, J. B., Philadelphia, Pa.	2
M & R Dietetic Laboratories, Inc., Columbus, Ohio	3—4
Majors Company, J. A., New Orleans and Dallas	7
McNeil Laboratories, Inc., Philadelphia, Pa.	13—14
Mead Johnson and Company, Evansville, Ind.	61—62
Merck and Company, Inc., Rahway, N. J.	16
Merrell Company, The Wm. S., Cincinnati, Ohio	63—64
Mosby Company, The C. V., St. Louis, Mo.	67—68
Nepera Chemical Company, Inc., Yonkers, N. Y.	54
Nutrition Research Laboratories, Chicago, Ill.	59—60
Pitman-Moore Company, Indianapolis, Ind.	24—25
Poythress and Company, William P., Inc., Richmond, Va.	48
Riedel - de Haen, Inc., New York, N. Y.	66
Sandoz Chemical Works, Inc., New York, N. Y.	57
W. B. Saunders Co., Philadelphia, Pa.	8
Schanley Laboratories, Inc., New York, N. Y.	29
Schering Corporation, Bloomfield, N. J.	50—51
Searle & Company, G. D., Chicago, Ill.	9
Sharp & Dohme, Philadelphia, Pa.	43—44
Smith, Kline & French Laboratories, Philadelphia, Pa.	19
Spencer Incorporated, New Haven, Conn.	45
Squibb and Sons, E. R., New York, N. Y.	36—37
Stearns & Company, Frederick, Detroit, Mich.	72
Vitamin Food Company, Inc., Newark, N. J.	42
White Laboratories, Inc., Newark, N. J.	30—31
Winthrop Chemical Company, New York, N. Y.	69—70
Young and Company, F. E., Chicago, Ill.	41

Book Reviews

Continued from page 73

electrocardiogram is an adjunct in the appraisal of the heart and information derived from it must be correlated with data obtained from the history, physical examination and x-ray. The current volume brings up to date the treatment of the coronary circulation and stresses the importance of serial curves in this field. The reviewer, however, cannot agree that the "simplified chest lead technic" simplifies; undoubtedly the position of the precordial electrode should be a fixed point but recording two leads from the selected point in the midclavicular lines so that lead IV (CR_4) gives opposite deflections from lead V (inverted CF_4) will merely confuse the student and perpetuate a state of confusion which arose when Wolferth's original technic was reversed and modified by the recommendations of the Committee for the Standardization of Precordial Leads.

Further, discussion of the preferred site for the chest electrode would seem to be beyond the scope of an elementary text; the space might better have been devoted to the distinguishing and differential features of the ST-T patterns in coronary disease, ventricular preponderance and digitalis intoxication. Similarly, the criteria for the important differentiation between a normal axis deviation and an abnormal ventricular preponderance are not very clearly outlined. The physician who seeks an understanding of electrocardiograms will acquire much from Dr. Carter's work. This second edition presents the material adequately but without especial distinction.

Fundamentals of Pharmacology. By Clinton H. Thienes, M.D., Ph.D., Professor and Head of the Department of Pharmacology, School of Medicine, University of Southern California. 497 pages. New York: Paul B. Hoeber, Incorporated, 1945. Cloth, $5.75.

Another addition to the large number of existing textbooks of pharmacology. This volume is a unit of the Medical Student Series, edited by Fred C. Zapffe, Secretary of the Association of American Medical Colleges.

The structure of the book is clear, its language correct. Historical introductions to many of the chapters enliven the text. The book is divided in twelve sections, including one on prescription writing. Clinical facts are mentioned in connection with the drugs, although the discussion of therapeutic uses is not always complete. The chapter on digitalis poisoning does not mention the bigeminal pulse. The classification of quinidine as "cardiac sedative" appears somewhat debatable to the reviewer, and the recommended dosage (up to 1 gm. from three to four times daily) is rather high. The initial dose of 0.2 gm. is correct, the 1½ gr. in parenthesis is a printer's error, of course. It is cachexia strumipriva, not strumiprivia (pp. 291, 293); the correct eponym is Graves', not Grave's disease (pp. 294, 297). Sulfamerazine has not been mentioned, although the other new sulfonamides are discussed. These minor flaws will no doubt be corrected in future editions.

The book should well serve its purpose as a useful and not too voluminous textbook for the harassed medical student.

Clinical Traumatic Surgery. By John J. Moorhead, B.S., M.D., D.Sc., F.A.C.S., (D.S.M.), Formerly Professor of Clinical Surgery, New York Post-Graduate Medical School, Columbia University, and Executive Officer, Department of Traumatic Surgery, Post-Graduate Hospital and Reconstruction Hospital Unit. 747 pages with 500 illustrations. Philadelphia and London: W. B. Saunders Company, 1945. Price $10.00.

This book was written, "with the main idea of placing in one volume all the information necessary to diagnose and treat the usual and most of the unusual effects of accident and injury." The author has succeeded admirably in this undertaking.

As a surgeon in World War I, and as a Colonel, Medical Corps, A. U. S., retired, but called into active service in World War II while visiting Honolulu at the time of the Japanese attack on Pearl Harbor, and as Medical Director of New York City Transit System, he has had abundant experience for writing authoritatively on trauma. Among the most interesting features of the book are his discussions of medicolegal aspects of trauma, which cause much litigation in industrial surgery and compensation insurance.

Injuries in general, standard technics, and shock, injuries due to burns, temperature changes, irradiation and electricity are adequately presented.

Fractures are dealt with in a practical and comprehensive manner. Several chapters are devoted to neuroses, compensation problems, malpractice suits, and similar medicolegal aspects of trauma.

Courage and Devotion Beyond the Call of Duty. Being a partial record of official citations to medical officers in the United States Armed Forces during World War II. Preliminary Edition, November, 1944. Published by Mead Johnson and Company, Evansville 21, Indiana.

This is a partial record of official citations to medical officers in the United States Armed Forces during World War II. It is a preliminary edition. The postwar publication is announced of a complete de luxe edition which will be available to members of the medical profession without charge upon written request. Such a record will be of much interest to those whose friends and relatives have received citations and decorations during their military service.

Peripheral Nerve Injuries. By Webb Haymaker, Captain, M.C., A.U.S., Neuropathologist, The Army Institute of Pathology, Washington, D. C., (On leave of absence from the University of California, San Francisco and Berkeley); and Barnes Woodhall, Major, M.C., A.U.S., Chief, Neurosurgical Section, Walter Reed General Hospital, Washington, D. C. (on leave of absence from Duke University, Durham, North Carolina). 227 pages with 225 illustrations. Philadelphia and London: W. B. Saunders Company, 1945. Price $4.50.

Begun as a brochure for distribution to army medical installation, this book has fortunately not been thus limited in its distribution.

The subject is approached from two directions: the underlying pathology of the lesion and the method of clinical examination.

Section I is devoted to "an analysis of the segmental and the peripheral nerve supply of skin, muscles and skeleton."

Section II discusses "examination of the peripheral nervous system."

Section III deals with injuries of plexuses and peripheral nerves.

This volume is a valuable ready reference handbook on peripheral nerve injuries.

Southern Medical News

ALABAMA

Medical Association of the State of Alabama will hold its next annual meeting in Birmingham, April 16-18.

Jefferson County Medical Society has elected Dr. Joe Donald, President; Dr. W. A. Clyde, Vice-President; Dr. W. E. Coleman, Secretary; and Dr. Ivan C. Berrey a member of the Board of Censors, all of Birmingham.

Dr. Herbert H. Thomas, formerly of Huntsville and recently Captain in the Medical Corps of the U. S. Army, has located in Birmingham to become associated with Dr. M. Y. Dabney.

Dr. Roy R. Kracke, Birmingham, is an Associate Editor of *Blood—The Journal of Hematology*. It is a bimonthly magazine, January being the first issue to be published. The editorial offices are at Boston, Massachusetts, and business affairs will be in the hands of Grune and Stratton, Publishers, New York, N. Y.

Dr. Thomas Malcolm Blake succeeds Dr. Hugh C. McRee, Hamilton, as Health Officer of Winston County.

Dr. Marvin S. White, Hamilton, has been named Health Officer of Marion County.

Dr. Walter G. Haynes, recently Major, Medical Corps, AUS, was appointed, effective November 1, 1945, Associate Professor of Neurosurgery and Chief of the Department, The Medical College of Alabama, Birmingham.

Dr. Irvin Hilary Griffin, Moundville, and Miss Mabry Griner, Tuscaloosa, were married recently.

Deaths

Dr. John McKelvey Foster, Birmingham, aged 65, died recently of coronary occlusion.

Dr. Merritt Jemison Heath, Birmingham, aged 58, died recently of coronary occlusion.

Dr. William D. Sellers, Birmingham, aged 65, died December 16, 1945.

ARKANSAS

First Councilor District Medical Society has elected Dr. C. H. Reagan, Marked Tree, President; and Dr. Joe Verser, Harrisburg, Vice-President.

Arkansas physicians who have recently been released from military service and returned to practice are: Dr. Frank M. Burton, Dr. W. W. Chamberlain, Dr. Jack R. Ellis, Dr. E. Driver Rowland and Dr. Jett O. Scott, all of Hot Springs National Park; Dr. James W. Amis and Dr. Fred H. Krock, both of Fort Smith; Dr. Brooks R. Teeter, Russellville; Dr. G. D. Murphy Jr. and Dr. Warren S. Riley, both of El Dorado; Dr. Robert M. Kelly, Lonoke; Dr. James W. Branch and Dr. James W. McKenzie, both of Hope; Dr. Chas. H. Reagan, Marked Tree; Dr. J. K. Grace, Belleville; Dr. Hollis B. Buckelew, Rogers; Dr. Robert F. Hyatt and Dr. C. Lewis Hyatt, both of Monticello; Dr. Joe Verser, Harrisburg; Dr. Henry V. Kirby, Harrison; Dr. E. P. McGehee Jr., Lake Village; Dr. W. E. Turner, Jr., Piggott; Dr. C. Ray Williams, Morrilton; Dr. Alfred H. Hathcock, Fayetteville; Dr. James D. Huskins, Siloam Springs; Dr. Chas. P. Wickard, Little Rock; and Dr. Merle T. Crow, Warren.

Dr. Lindsley F. Billingsley, Monticello, has moved to Colorado Springs, Colorado.

Dr. Chas. G. Leverett, Fort Smith, has moved to McGehee.

Dr. Wm. F. Gerber, Little Rock, is an Assistant in Neurosurgery to Dr. Olam R. Hyndman, Denver, Colorado, and is an Assistant in Neurosurgery, University of Colorado School of Medicine.

Dr. J. A. Henry, for the past three years on the staff of the State Sanatorium, is now associated with Dr. Roy Millard, Russellville.

Dr. R. L. Hopkins, DeQueen, retired from practice, has moved to Maitland, Florida.

Dr. W. H. Daubs, Foreman, has moved to Texarkana with offices in the Beck Building.

Dr. John M. Samuel, taking postgraduate work at the University of Wisconsin School of Medicine, will return to practice at Little Rock in March.

Dr. S. S. Beaty, England, has been appointed part-time VD clinician, Loanoke County Health Unit.

Dr. John M. Smith, Little Rock, has been appointed part-time VD clinician at Little Rock.

Deaths

Dr. William Thomas Bradley, Blackton, aged 70, died recently of carcinoma of the prostate.

Dr. Alvin Benton Caldwell, Forrest City, aged 66, died recently of coronary embolism.

Dr. William Franklin Simmons, Gilmore, aged 72, died recently of nephritis.

DISTRICT OF COLUMBIA

Dr. Norman T. Kirk, Major General, Medical Corps, U. S. Army, The Surgeon General, Washington, was recently awarded the Distinguished Service Medal in recognition of his "outstanding leadership . . . in directing the largest Medical Department in the history of the United States Army."

Dr. James Stevens Simmons, Brigadier General, Medical Corps, U. S. Army, Washington, Chief, Preventive Medicine Service, Office of The Surgeon General, was recently awarded the Distinguished Service Medal, the citation reading "for exceptionally meritorious service rendered in a duty of heavy responsibility as Chief of the Preventive Medicine Service, Office of The Surgeon General, from November 1939 to August 1945 . . ."

Dr. John Burke, Washington, was elected Vice-President of the American Ophthalmological Society at its meeting held in November, 1945.

Dr. Harold W. Jones, Colonel, Medical Corps, AUS, was recently elected Secretary-Treasurer of the Association of Honorary Consultants to the Army Medical Library, Washington.

Dr. Arthur B. Welsh, Washington, Colonel, Medical Corps, AUS, was recently awarded the Legion of Merit.

George Washington University School of Medicine, Washington, plans for postgraduate instruction in various fields of medical and surgical practice designed primarily for medical officers as they are released from the armed forces, open to civilian physicians if vacancies remain. A general review course will be offered for nine weeks beginning February 11. Short, intensive advanced courses will be available and longer graduate courses in certain specialties. Information may be obtained from the

Continued on page 62

1946

ARMOR AND ARMAMENTARIUM

Guns are silent and grass grows in the foxholes, but there can be no peace treaty in the endless war on mankind's immortal enemy—Disease. Home comes the physician from his lifesaving on the battlefields of man-made death abroad to march again beside his colleagues who have so valiantly held the casemates of health at home.

Battle front and home front, boulevard and dirt road, the mighty facilities of the medical center and the challenge of practice in the lonely farmhouse—all are the front line trenches in humanity's continuing crusade to tame cannibal protoplasm. There is no discharge in that war.

The first cry of pain in the world was the first call for a physician. It has been answered as it echoed down the centuries; it will be answered in the unrolling years of the future.

As this questioning year of 1946 opens with the world convalescing from malignant political disease, we would like to claim the privilege of welcoming the thousands of physicians returning from unparalleled service on war fronts—of saluting those who shouldered such heavy burdens at home—of expressing the confidence that the traditional unity of the profession armed with new and potent weapons will drive the front lines of the war on disease ever forward.

We know that we are joined in this expression by all organizations which seek to play their roles, large and humble, as institutions of supply to those "bound by the covenant and oath, according to the law of medicine." S. H. CAMP AND COMPANY, Jackson, Mich.

Continued from page 96

Director of Postgraduate Instruction, George Washington University School of Medicine, 1335 H Street, N.W., Washington 5.

Jacobi Society, Washington, has elected Dr. Lester Neuman, President; Dr. Benjamin Golden, Vice-President; Dr. Edward Cafritz, Treasurer; and Dr. Leon Gerber, Secretary.

Dr. George C. Ruhland, District Health Officer, Washington, has appointed the following physicians a committee to advise him on tuberculosis problems in Washington: Dr. James G. Townsend, Chairman; Dr. Samuel Ingraham, Dr. Howard M. Payne, Dr. LeRoy Dunn, Dr. Daniel L. Seckinger, Dr. A. Barklie Coulter, Dr. Daniel L. Finucane, Dr. Alvin R. Sweeney and Dr. Melvin P. Isaminger, who will be Secretary, all of Washington.

Dr. J. Blaine Harrell, Washington, succeeds Dr. F. X. McGovern, resigned, as a member of the District Board of Police and Fire Surgeons.

Dr. Henry B. Gwynn, Major, M. C., AUS, Washington, has been elected a member of the Baruch Committee on Rehabilitation and Reconditioning.

The Tulane University of Louisiana

School of Medicine

POSTGRADUATE COURSES

Tropical Medicine and Parasitology.....January 7-May 25, 1946

Obstetrics and Gynecology.....January 14-18, 1946

General Review of Medical Practice, so arranged that any number of weeks may be taken.....March 11-May 25, 1946

For detailed information write

DIRECTOR

Department of Graduate Medicine

1430 Tulane Ave. New Orleans 13, La.

Deaths

Dr. Guy W. Leadbetter, Washington, aged 52, died October 4, 1945.

FLORIDA

Florida Medical Association will hold its annual meeting at Jacksonville, George Washington Hotel, April 22-24.

Dr. E. C. Swift, Jacksonville, has reopened his offices with practice limited to internal medicine.

Dr. Sullivan G. Bedell, Jacksonville, has opened his offices in the Lynch Building with practice limited to neurology and psychiatry.

Dr. A. B. Connor, Fort Lauderdale, retired from practice, is living in California.

Dr. Bernard D. Ross, Tampa, is located in Miami, practice limited to internal medicine.

Dr. Lloyd J. Netto, West Palm Beach, recently took an extension course in surgery at the Roosevelt Hospital, New York City.

Dr. Donald H. Gahagen, Fort Lauderdale, who has been away for some time, is associated with Dr. E. M. Hendricks at Fort Lauderdale.

Dr. Thomas H. Odeneal, Fort Lauderdale, has moved to Winter Haven.

Florida physicians who have recently been released from military service and returned to practice are Dr. Francis H. Langley and Dr. H. Gerald Morin, both of St. Petersburg, and Dr. W. E. Wentzel, Bradenton.

Dr. Nathan Weil, Jr., Jacksonville, has opened his office in the Medical Arts Building, practice limited to pediatrics.

Dr. Garland Marian Johnson and Dr. Alva Richard Taylor, both of Fort Lauderdale, were married recently.

Dr. Anne Louise Hendricks, Fort Lauderdale, and Mr. Robert McCurdy were married recently.

Deaths

Dr. Roy O. Cooley, West Palm Beach, aged 59, died recently.

Dr. John William Dunn, Safety Harbor, aged 63, died recently of pulmonary tuberculosis.

Dr. John M. Fawcett, Coral Gables, aged 81, died recently of carcinoma of the gallbladder.

Dr. Rexin J. Pumphrey, Lake Worth, aged 83, died recently of nephrosclerosis and arteriosclerotic heart disease.

GEORGIA

Medical Association of Georgia will hold its next annual meeting at Macon, May 7-10.

Dr. L. R. Massengale, Lumpkin, is Assistant Resident in Pediatrics, University Hospital, Augusta.

Georgia physicians who have recently been released from military service and returned to practice are: Dr. J. D. Martin Jr., Atlanta; Dr. William A. Wilkes, Lincolnton; Dr. Harry B. Baxley, Donalsonville; and Dr. Ralph O. Bowden, Savannah.

Dr. W. P. Durham, Eastman, has moved to Americus.

Dr. Charles F. Engelking, Dalton, has resigned as Commissioner of Public Health and is on the staff of the University of Iowa.

Dr. C. L. Ridley, Macon, Superintendent of the Macon Hos-

Continued on page 64

Alcoholism Senility Drug Addiction

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Established 1904

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BEAUTIFUL AND SPACIOUS GROUNDS AFFORD OUTDOOR RELAXATION

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Just as medicine and surgery have made great strides during the war years, Kodak, too, has continued to improve x-ray film, intensifying screens, chemicals, and other materials for the radiologist.

EASTMAN KODAK COMPANY
Medical Division
ROCHESTER 4, N. Y.

Kodak

Continued from page 62

pital, has been selected to the Board of Trustees of the Georgia Hospital Association.

Dr. H. W. Scheye, Savannah, has resigned as Resident Physician at the Central of Georgia Hospital to do general practice at Baltimore, Maryland. Dr. Hayes Cluxton succeeds Dr. Scheye.

Dr. W. B. Harrison, State Health Officer, has moved from Gainesville to Smyrna where he will make his home. His office will be at the State Board of Health Office, Atlanta.

Dr. W. D. Cagle, former Hall County Health Officer will serve East and Northeast Georgia from his office at Marietta.

Dr. Paul Rawiszer has moved from Jasper to Lavonia.

Dr. Max Blumberg, Atlanta, announces the opening of his offices at 35 Fourth Street, N.E., Atlanta, practice limited to internal medicine.

Dr. L. Minor Blackford, Atlanta, has reopened his office at 104 Ponce de Leon Avenue, N.E., Atlanta, with practice limited to internal medicine.

Dr. Cornelius F. Holton, Savannah, has been appointed Chief Surgeon of the Central of Georgia Railway, succeeding the late Dr. Craig Barrow.

DEATHS

Dr. Joel Toy Curry, Macon, aged 73, died recently of coronary occlusion.

KENTUCKY

Kentucky State Medical Association at its recent annual meeting installed Dr. J. Watts Stovall, Grayson, President; and elected Dr. Elbert W. Jackson, Paducah, President-Elect; and Dr. Francis Guy Aud, Louisville, Dr. John M. Rees, Cynthiana, and Dr. Hugh L. Houston, Murray, Vice-Presidents.

Dr. Owen Carroll, New Castle, has been awarded the medal for meritorious professional and public health service in recognition of his many services to organized medicine and to his people for more than a half century. The medal was sponsored and donated by Dr. E. M. Howard, Past President of the Kentucky State Medical Association.

Dr. Carl C. Howard, Glasgow, received the first award of the State Association's Distinguished Service Medal. Dr. Howard is credited with starting the movement which led to a state plan for building five tuberculosis hospitals in the state.

The bas-relief of the late Dr. Arthur T. McCormack was exhibited during the recent state meeting at Lexington and it will be placed in the State Health Department Building at Louisville as a gift of Dr. Waller O. Bullock, Lexington, who did this bronze work.

Dr. Irvin Abell, Louisville, President of the Association of Military Surgeons of the United States, presided at a dinner held recently in Washington, D. C., at which the Gorgas Medal, awarded annually by Wyeth Incorporated, Philadelphia, Pennsylvania, was presented to Dr. Lowell T. Coggeshall, Captain, Medical Corps, USNR, Klamath Falls, Oregon, for his work on tropical diseases.

Dr. John H. Rompf, Lexington, who has been released from military service, has opened his office in Lexington.

Dr. Robert P. Osborn, recently released from military service, will resume practice in Louisville.

Baute Memorial Hospital, has been purchased by the Dominican Sisters of St. Catherine Convent, and the name changed to Mary Immaculate Infirmary. The staff elected is composed of Dr. B. J. Baute, Lebanon, Chairman; Dr. M. A. Coyle, Springfield, Vice-Chairman; Dr. Lyman Hall, Campbellsville, Vice-Chairman; and Dr. N. D. Widmer, Lebanon, Secretary.

Dr. William F. Lamb, former Assistant Director, Division of County Health Work for the State Department of Health, has been appointed Director of the Division of Venereal Diseases.

DEATHS

Dr. Clifford J. Morris, Dawson Springs, aged 70, died recently of heart disease.

Dr. Charles E. O'Bryan, Mortons Gap, aged 77, died recently of heart disease.

LOUISIANA

Lafourche Valley County Medical Society at a recent reorganization meeting elected Dr. Guy R. Jones, Lockport, President; Dr. H. L. Haydel, Houma, Vice-President; and Dr. Philip Robichaux, New Orleans, Secretary-Treasurer.

Continued on page 66

THE NEW YORK POLYCLINIC
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Obstetrics and Gynecology

A full time course. In Obstetrics: Lectures; prenatal clinics; witnessing normal and operative deliveries; operative obstetrics (manikin). In Gynecology: Lectures; touch clinics; witnessing operations; examination of patients preoperatively; follow-up in wards postoperatively. Obstetrical and Gynecological pathology; regional anesthesia (cadaver). Attendance at conferences in Obstetrics and Gynecology. Operative Gynecology on the Cadaver.

Physical Therapy

Didactic lectures and active clinical application of all present-day methods of physical therapy in internal medicine, general and traumatic surgery, gynecology, urology, dermatology, neurology and pediatrics. Special demonstrations in minor electrosurgery, electrodiagnosis, fever therapy, hydrotherapy, including colonic therapy, light therapy.

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To those of you who left your homes to serve your country we extend a warm and friendly welcome, a happy welcome home. The extraordinary service the medical profession gave in the war can't be told here. Here we want to say how glad we are to have you back again, away from the heavy change of war; back into your proper sphere, back again into your peace-time practice, back to a long, peaceful, happy service in the nation's health. ▸ ▸ ▸ Back again at home, in your own country.

GENERAL ELECTRIC X-RAY CORPORATION

Continued from page 64

Dr. George W. McCoy, Professor and Director of the Department of Public Health, Louisiana State School of Medicine, New Orleans, has been appointed Acting Dean of the School. Dr. Wilbur S. Smith, who was named Dean recently, has resigned.

Tulane University School of Medicine has received a gift of $1,075,000 from Miss Sarah Henderson for the endowment of the Chair of Tropical Medicine and for the improvement and changes in that Department.

Dr. James T. Nix, Jr., and Miss Mary E. Barksdale, both of New Orleans, were married recently.

Dr. John F. Oakley, Commander, U. S. Navy, formerly of New Orleans, was recently awarded the Navy and Marine Corps Medal for heroism in action against the enemy on Saipan and Tinian.

Deaths

Dr. William McGaughey Dollerhide, Oak Grove, aged 68, died recently of carcinoma of the liver.

Dr. Carson R. Reed, Natchitoches, aged 66, died recently.

MARYLAND

Medical and Chirurgical Faculty of the State of Maryland at its annual meeting in April 1945 elected the following officers to serve for 1946: Dr. Isaac N. King, Prince Frederick, President; Dr. William D. Noble, Easton, Dr. Thomas R. Chambers, Baltimore, and Dr. Grant E. Ward, Baltimore, Vice-Presidents; Dr. W. Houston Toulson, Baltimore, Secretary; and Dr. J. Albert Chatard, Baltimore, Treasurer.

Memorial Laboratory of Infectious Diseases of the United States Public Health Service is under construction at Bethesda and plans call for the completion of the building around May 1946. It is in tribute to the laboratory workers of the service who died as a result of risks involved in their professional duties. It is planned when the building is opened for two weeks for public inspection that after that the only visitors permitted entry will be scientists.

Dr. Perrin A. Long, Colonel, Medical Corps, AUS, Baltimore, was recently awarded the Legion of Merit in recognition of his work as medical consultant to the surgeon, Mediterranean Theater of Operations from January 3, 1943, to August 1, 1945.

Dr. Walter L. Kilby, Lieutenant Colonel, Medical Corps, AUS, has returned after an absence of more than three years overseas and resumed his duties as Professor of Roentgenology, University of Maryland School of Medicine and Director of the Department of Roentgenology, University Hospital, Baltimore.

Dr. Walter D. Wise, Colonel, Medical Corps, AUS, recently released from military service, has resumed his position as a Professor of Surgery, University of Maryland and Chief of Staff, Mercy Hospital, Baltimore.

Dr. Daniel James Greiner, Lieutenant Colonel, Medical Corps, AUS, has returned after an absence of more than three years overseas and has resumed his position as Associate Professor of Pathology, University of Maryland School of Medicine, Baltimore.

Dr. Harry M. Robinson Jr., Major, Medical Corps, AUS, has been released from service and has returned to his position as Assistant Professor of Dermatology, University of Maryland School of Medicine, Baltimore.

Dr. Frederick B. Mandeville, for eleven years Professor of Radiology at the Medical College of Virginia, Richmond, Virginia, has been appointed an Associate Professor of Roentgenology at the University of Maryland School of Medicine, Baltimore.

MISSISSIPPI

Dr. Early B. Lokey Jr., Hattiesburg, Major, Medical Corps, U. S. Army, was recently awarded the Bronze Star for meritorious achievement on Leyte and Okinawa.

Deaths

Dr. William J. Coleman, Aberdeen, aged 61, died recently.

Dr. A. W. Dumas Sr., Dumas, aged 69, died recently.

Dr. Henry S. Goodman, Cary, aged 71, died recently.

Dr. Clyde M. Speck, New Albany, aged 58, died recently.

Dr. B. E. Vowell, Carthage, aged 53, died recently.

Dr. William Arthur Williamson, who resided at Duffee, but

Continued on page 68

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ORALLY - for respiratory and circulatory support
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INJECT 1 to 3 cc. Metrazol as a restorative in circulatory and respiratory failure, in barbiturate or morphine poisoning and in asphyxia. PRESCRIBE 1 to 3 tablets, or 15 to 45 minims oral solution, as a sustaining agent in pneumonia and congestive heart failure.

AMPULES - 1 and 3 cc. (each cc. contains 1½ grains.)
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Continued from page 66

engaged in practice in Meridian, aged 75, was killed recently when struck by a train.

MISSOURI

Missouri physicians who have recently been released from military service and returned to practice are: Dr. Fred M. Sandifer Jr., Greenwood; Dr. Quentin M. Gaines, Kirkwood; and Dr. T. J. Hanlon and Dr. Sam Bassett, both of St. Louis.

St. Louis County Medical Society has elected Dr. E. B. Waters, President; Dr. Willard J. Hans, Vice-President; and Dr. Richard Sutter, Secretary.

Dr. William E. Sauer, Professor of Otolaryngology and Director of the Department, St. Louis University School of Medicine, on account of his recent retirement, was awarded the Distinguished Service Professorship.

Dr. Roy F. Garrison and Miss Barbara Ummel, both of Kansas City, were married recently.

Dr. Rudolph V. Powell and Mrs. Vincentia Rehme, both of St. Louis, were married recently.

DEATHS

Dr. Albert Edward Snow, St. Louis, aged 75, died recently of arteriosclerosis.

Dr. Thomas Alvin Son, Bonne Terre, aged 88, died recently of nephritis and fracture of the left hip received in a fall.

Dr. Chester Arthur Poe, St. Louis, aged 58, died recently of cerebral hemorrhage.

NORTH CAROLINA

North Carolina is the first state selected in which the American Academy of Pediatrics will conduct a thorough fact finding survey to determine needs of children in a postwar world in order that the medical mind may assume the leadership in making available the facilities with which these needs are to be met. Dr. Joseph Lachman, Director, Pulaski County Health Department, has been assigned by the U. S. Public Health Service to the North Carolina Pediatrics Society to serve as Executive Secretary.

Dr. L. Nelson Bell, Swannanoa, has moved to Asheville.

Dr. R. T. Stimpson, Director of the Bureau of Vital Statistics of the State Board of Health for fourteen years, has resigned and gone into general practice with offices in the Nissen Building, Winston-Salem.

Dr. P. W. Flagge, High Point, has moved to Fairhope, Alabama.

Dr. John W. Morris, North Wilkesboro, is Associate Surgeon to Dr. B. F. Royal, Chief of Staff of the Morehead City General Hospital.

Dr. H. C. Whims has resigned as Health Officer of the Catawba-Lincoln Counties Health Unit to accept a position as Health Officer of Buncombe County, succeeding Dr. Wilfred N. Sisk, resigned.

Sutton Mental Hospital, Camp Sutton, the state's new mental hospital, will treat approximately five hundred patients when the unit begins operating at the beginning of this year.

North Carolina physicians who have recently been released from military service and returned to practice are: Dr. Robert T. Odom, Winston-Salem; and Dr. William O. Matthews, formerly of Davidson now of Charlotte.

Dr. Richard F. Richie, Major, Medical Corps, U. S. Army, Raleigh, has been awarded the Bronze Star.

Dr. Glenn G. Newman, Clinton, and 1st Lieutenant Pearl Kaiser, Leesville, South Carolina, were married recently.

DEATHS

Dr. Eugene Pierre Mallett, Hendersonville, aged 83, died recently of lobar pneumonia and asthma.

OKLAHOMA

Oklahoma State Medical Association will hold its next annual meeting in Oklahoma City, Skirvin Tower Hotel, May 1-3.

Dr. John W. Cavanaugh, Assistant Professor of Surgery, University of Oklahoma School of Medicine, has resigned.

Dr. Donald B. McMullen, Associate Professor of Preventive Medicine and Public Health, University of Oklahoma School of Medicine, has been granted leave of absence to go with the Army of Occupation in Japan for a survey of schistosomiasis.

Continued on page 70

The New Emmert-Gellhorn Pessary

An improved device for treatment of inoperable uterine prolapse

For use in cases of inoperable uterine prolapse, this new pessary is offered as an improvement upon the well-known Gellhorn Pessary, long used with great success. The Emmert-Gellhorn Pessary is made of one solid piece of Neicomold, a synthetic material that may be boiled. The material is unbreakable and stays smooth in use since it is unaffected by the genital secretions. Neither does it affect or irritate the vaginal mucosa. The shape is approximately that of a mushroom, with the upper surface slightly depressed.

Instead of a solid stem, the Emmert-Gellhorn Pessary employs a stem having a hole drilled throughout its length. This offers the considerable advantage of drainage, preventing accumulation of dammed-up secretions. This permits fewer removals of the pessary for cleaning, of great benefit to the patient, particularly since many of those using this pessary are aged and find such frequent manipulation and visits to the physician a severe handicap.

The stem of the new pessary is ¼ inch shorter than that of the former pattern, and does not terminate in the knob formerly used. A slight hollowing of the stem near the end, however, allows easy grasp for removal. In weight, the Emmert-Gellhorn Pessary has the advantage of being considerably lighter. This decreased weight also adds to the comfort of the patient.

PRICE—JE5162 — Emmert-Gellhorn Pessary, Diameter 2 or 2½ inches, STATE SIZE, Each $2.25

SPECIAL SIZES: 2¼, 2¾ or 3-inch may be had on order, at each $2.75

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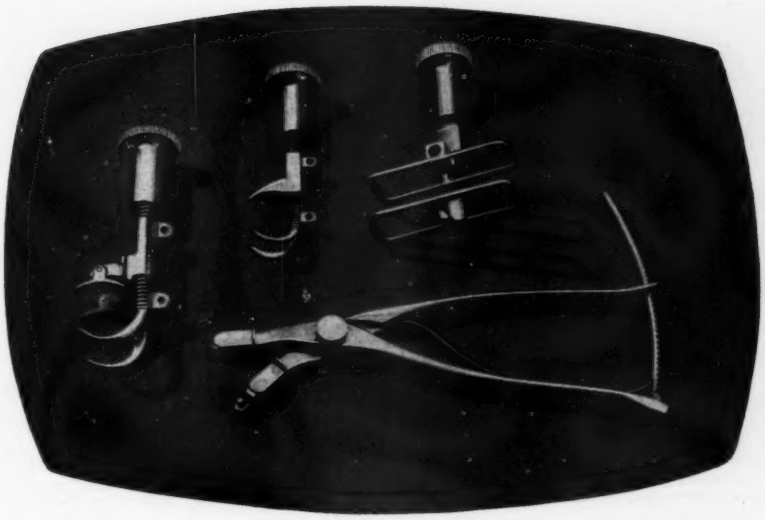

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FOR FRACTURES

The four-pronged clamp in use with handle.

● The new Zimmer clamp outfit includes the new Zimmer four-pronged clamp, with its two-plane self-adjusting prongs that conform to the taper of the bone and are especially valuable in holding certain types of fractures in reduction because of the swivelled arrangement.

The handle fits all of the attachments and is easily and quickly removed. It is equipped with a ratchet arrangement that locks the clamp in the desired position.

Complete with two sizes each of the Zimmer clamp, conventional three-prong clamp and Conley Elongated Jaw clamp. Knurled thumb screws on each of these attachments can readily be removed when it is desired to use the handle for clamping and holding bone fragments in position.

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To enlarge the blood vessels and increase circulation, rhythmic constriction is a valuable adjunctive procedure in arteriosclerosis, chilblains, diabetic ulcers and gangrene, acute vascular occlusion, early thromboangiitis obliterans, intermittent claudication.

RHYTHMIC CONSTRICTION in Peripheral Vascular Disease

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This therapeutic effect is produced by

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which automatically increases and relaxes pressure within a pneumatic cuff applied around the diseased extremity.

Subjectively, it is noted that pain is relieved and warmth returns to the skin. Objectively, increased vascularity is observed, and an increase in oscillometric curves may be obtained in many cases of organic vascular obstruction.

Periods of constriction and release may be separately controlled. Does not require supervision during use. Comfortable — quiet — patients may relax or sleep during treatment. Convenient, portable, safe, economical of current.

For complete information consult your nearest dealer, or write us direct.

The BURDICK CORPORATION
MILTON WISCONSIN

Continued from page 68

Dr. Alberta Webb Dudley has been appointed Assistant in Medicine on the faculty of the University of Oklahoma School of Medicine.

Dr. W. L. Haywood has been appointed Chief of Staff of the South Ward, Negro Division, University of Oklahoma Hospital.

Deaths

Dr. Malcolm McKellar, Tulsa, aged 60, died recently.

Dr. R. K. Pemberton, McAlester, aged 74, died recently of coronary occlusion.

SOUTH CAROLINA

South Carolina Medical Association at its House of Delegates meeting held recently in Columbia, elected Dr. James C. McLeod, Florence, President-Elect. Dr. William T. Brockman, Greenville, is President; Dr. Enoch M. Dibble, Marion, Vice-President; and Dr. Julian P. Price, Florence, Secretary-Treasurer.

Dr. W. M. Fox, Columbia, has been taking a post-graduate course in radiology.

Dr. W. T. Batton and Dr. J. E. Boone, Columbia, have formed a partnership of their specialty, urology.

Dr. R. Kyle Brown, Greenville, was elected President of a South Carolina section of the American Trudeau Society at a recent meeting of the South Carolina Tuberculosis Association held in Columbia.

Dr. Will S. Fewell, Greenville, and Mrs. Jessie Gallivan were married recently.

Dr. Douglas Jennings Jr., Bennettsville, and Miss Elizabeth Ilderton were married recently.

South Carolina physicians who have recently been released from military service and returned to practice are: Dr. J. W.

Continued on page 72

Foley
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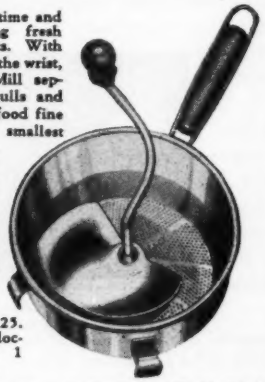
Conserves mother's time and energy in straining fresh vegetables and fruits. With just a few twists of the wrist, the Foley Food Mill separates fibres and hulls and purees any cooked food fine enough for the smallest baby or for any adult diet — peas, carrots, beets, string beans, spinach, apple sauce, prunes. Made of steel, rust- and acid-resistant. At department and hardware stores.



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Course includes—Clinical Pathology, Hematology; Serology; Applied Bacteriology; Basal Metabolism; Blood Chemistry; Electrocardiography; Parasitology; Tissue Cutting and Staining and X-Ray Technique,

ENROLL NOW for priority. 12 months course; 6 months internship. Classes start Jan., March, July, Sept., Oct.

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Under the Personal Supervision of
R. B. H. Gradwohl, M. D., Sc. D., Director
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Continued from page 70

McLean, Dr. Joseph I. Converse and Dr. Walter H. Watson, all of Greenville.

TENNESSEE

Dr. Phil Bleecker, Memphis, Major, Medical Corps, U. S. Army, was recently awarded the Bronze Star "for meritorious achievement during the Italian campaign."

Dr. John D. Hughes, Memphis, Lieutenant Colonel, Medical Corps, U. S. Army, was recently awarded the Legion of Merit for outstanding service with Medical Corps in Italy.

Dr. Robert Norman Buchanan Jr., Henderson, and Miss Rachel Blackman, Wartrace, were married recently.

DEATHS

Dr. James Decator Henderson, Boyds Creek, aged 79, died recently of disease of central nervous system.

Dr. William John St. Clair O'Callaghan, Nashville, aged 77, died recently of coronary thrombosis.

TEXAS

Texas Hospital Association will hold its next meeting in Fort Worth, March 21-23.

Texas Radiological Society will hold its annual meeting in Dallas, Baker Hotel, January 14. Dr. J. R. Maxfield, Jr., Dallas, is Program Chairman of the Society.

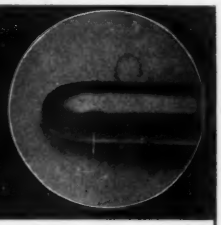
Dallas Southern Clinical Society will meet in Dallas, Hotel Adolphus, March 18-21.

Texas Surgical Society at its fall semi-annual meeting held in San Antonio elected Dr. G. V. Brindley, Temple, President; Dr. Joe White, Fort Worth, First Vice-President; Dr. James Greenwood, Houston, Second Vice-President; Dr. Walter G. Stuck, San Antonio, Secretary; Dr. C. B. Carter, Dallas, Tresaurer; Dr. G. W. N. Eggers, Galveston, Recorder; and Dr. J. V. Goode, Dallas, Councilor. The spring meeting will be held in Temple, April 1-2.

Lubbock Memorial, Lubbock, a non-profit, open staff institution, has been chartered to take the place of Lubbock General Hospital. The new hospital, a proposed $1,000,000 plant designed to accommodate two hundred patients originally, will be

Continued on page 74

RADON SEEDS



FOR safety and reliability use composite Radon seeds in your cases requiring interstitial radiation. The Composite Radon Seed is the only type of metal Radon Seed having smooth, round, non-cutting ends. In this type of seed, illustrated here highly magnified, Radon is under gas-tight, leak-proof seal. Composite Platinum (or Gold) Radon Seeds and loading-slot instruments for their implantation are available to you exclusively through us. Inquire and order by mail, or preferably by telegraph, reversing charges.

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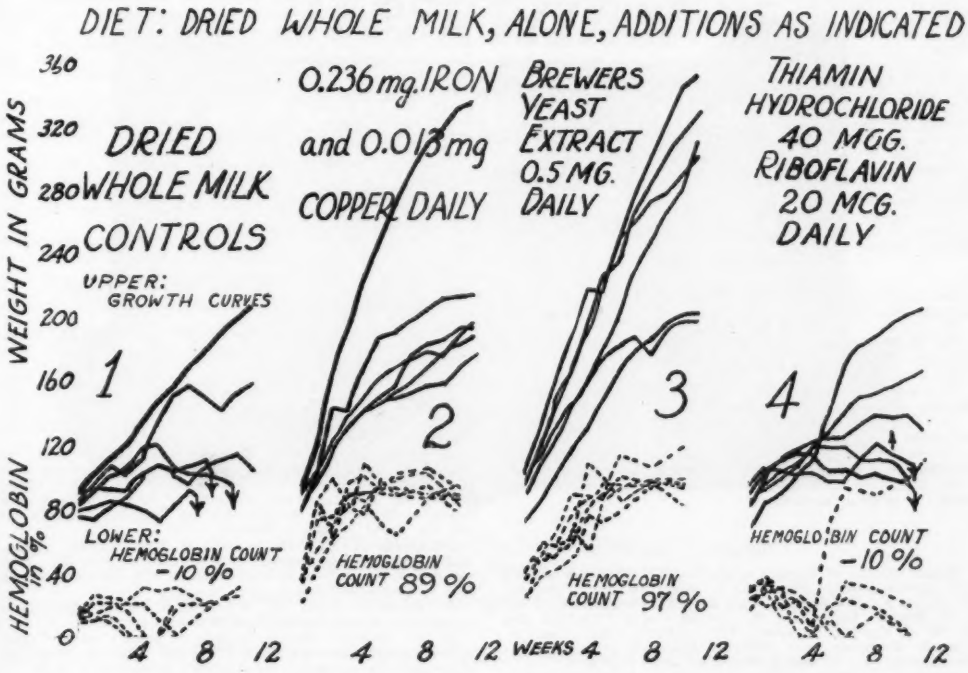

2. Copper and Iron (2) nearly, not quite, protect the hemoglobin, with more growth than had from the Dried Whole Milk. There is no reproduction.

3. Brewers Yeast Extract (3) gives normal growth, a litter and full hemoglobin protection. It is normally high in iron with adequate copper supplement; supplies B Vitamin factors, including the extrinsic anti-anemia factor—not yet separated—in which milk is deficient.

4. Thiamin and Riboflavin (4) added show no value over the Dried Whole Milk Diet. It is an observation of value in supplementing the bottle formula with needed B Vitamins.

Samples sent to physicians and hospitals

VITAMIN FOOD COMPANY, INC.

Vitamin Research Laboratories, Inc.

187 Sylvan Avenue **Newark 4, N. J.**

Continued from page 72

moved from the downtown site of the present hospital to allow for business expansion.

Seventh District Medical Society has elected Dr. Robert B. Morrison, Austin, President; Dr. J. D. Stevens, Bastrop, Vice-President; and Dr. M. I. Brown, Austin, Secretary.

Dr. G. L. Nesrsta, Ozona, has moved to San Angelo.

Dr. John T. Harrington, Waco, Physician and Chairman since 1932 of the Board of Trustees of Baylor University, was recently honored with a reception formally opening Harrington Hall, a dormitory redecorated and renamed for him at Baylor University, Waco.

Dr. G. Miller, Big Springs, has been appointed Superintendent, Big Spring State Hospital, succeeding the late Dr. Glenn S. Weaver.

Dr. H. C. Samuel has been appointed Assistant Superintendent, State Tuberculosis Sanatorium, San Angelo, succeeding Dr. Walter C. Brown, who resigned to enter private practice in Corpus Christi.

Dr. and Mrs. Joseph Hill McCracken, Mineral Wells, recently celebrated their golden wedding anniversary with a reception at the Baker Hotel, Mineral Wells.

Dr. C. A. Dwyer, Jr., Houston, County Psychiatrist for Harris County, has been appointed Supervisor of the psychopathic ward and the juvenile detention home.

Dr. John M. Travis Jr., who has just completed a two-year residency in obstetrics and gynecology at Charity Hospital, New Orleans, is on the staff of Nan Travis Hospital and Travis Clinic, Jacksonville.

Dr. Chauncey D. Leake, Ph.D., Galveston, has been elected President of the Association of Honorary Consultants to the Army Medical Library.

Deaths

Dr. Glenn Bartlett Sr., Falfurrias, aged 72, died recently of coronary thrombosis.

Dr. Thomas Eugene Dunnam, Houston, aged 61, died recently.

Dr. Hamner Carson Irwin, Orange, aged 67, died recently of coronary arteriscleroisis, pulmonary atelectasis and emphysema.

Dr. Thomas M. Jeter, Fort Worth, aged 74, died recently.

Dr. George L. Lanius, Beaumont, aged 78, died recently of diabetes mellitus and acute nephritis.

Dr. Frank H. Rosebrough, San Antonio, died recently of myocardial failure.

Dr. Stephen Thomas Turner, El Paso, aged 89, died recently following an operation for diabetic gangrene.

Dr. Glenn Shellhorn Weaver, Big Springs, aged 55, died recently of cerebral hemorrhage.

VIRGINIA

Medical Society of Virginia at its House of Delegates meeting held recently installed Dr. Julian L. Rawls, Norfolk, President; and elected Dr. William L. Powell, Roanoke, President-Elect; Dr. J. D. Hagood, Clover, Dr. W. Lowndes Peple, Richmond, and Dr. W. C. Caudill, Pearisburg, Vice-Presidents. Miss Agnes V. Edwards, Richmond, was re-elected Executive Secretary. The 1946 meeting will be held at Virginia Beach in October.

Patrick-Henry Medical Society has elected Dr. T. H. Dickerson, Martinsville, President; Dr. J. T. Shelburne, Critz, Vice-President; and Dr. W. N. Thompson, Stuart, Secretary-Treasurer.

Mid-Tidewater Medical Society has elected Dr. W. H. Springall, Gloucester, President; and Dr. M. H. Harris, West Point, Secretary-Treasurer, re-elected. Vice-Presidents from various counties are: Dr. P. G. Pearson, Aylett; Dr. E. L. W. Ferry, Millers Tavern; Dr. R. D. Bates, Newtown; Dr. H. A. Tabb, Gloucester; Dr. R. B. Bowles, Mathews; Dr. J. R. Parker, Providence Forge; Dr. Clarence Campbell, Sparta; and Dr. Horace Hoskins, Saluda.

Southwestern Virginia Medical Society has elected Dr. A. P. Jones, Roanoke, President; Dr. Charles F. Graham, Wytheville, Vice-President; and Dr. Andrew F. Giesen, Radford, Secretary-Treasurer.

Harvard Club of Virginia has elected Dr. Sidney S. Negus and Dr. Thomas F. Wheeldon, First and Third Vice-Presidents respectively and Dr. Randolph Hoge a member of the Executive Committee, all of Richmond.

The Department of Medicine, University of Virginia, in conjunction with the Medical College of Virginia, Richmond, are offering an intensive two-week refresher course in general medicine every three months, the first having been held December 3-15, 1945. Information desired about other courses to be given by the Medical College of Virginia in March and September can be secured by addressing Dr. Jacques P. Gray, Dean, Medical College of Virginia, Richmond.

Dr. F. B. Mandeville, Richmond, has resigned after eleven years as Professor of Radiology and Roentgenologist at the Medical College of Virginia and has accepted a similar position at the Baltimore City Hospital, Baltimore, Maryland.

Dr. A. L. Carson, Jr., has resumed his duties as Director of the Bureau of Maternal and Child Health of the State Health Department after a leave of absence during which time he was Acting Obstetrician-in-Chief, Mary Imogene Bassett Hospital, Cooperstown, New York.

Dr. Sidney Trattner, recently with the Virginia Commission for the Blind, is engaged in the private practice of ophthalmology in Fredericksburg.

Dr. H. B. Luttrell, Delaplane, has moved to Pulaski.

Dr. A. Warren Rucker, formerly of Fieldale, expects to locate for practice in Martinsville.

Dr. Guy W. Horsley, Richmond, who has been Chief of the Surgical Service, McGuire Hospital, since his return from overseas, has been awarded the Legion of Merit.

Dr. Carl W. LaFratta, Richmond, who has been released from military service, has been appointed Acting Medical Director, Pine Camp Hospital to fill the vacancy created by the resignation of Dr. B. B. Bagby, Jr., who has moved to Milledgeville, Georgia.

Dr. Chalmers Laughlin Gemmill, Associate Professor of Physiology, Johns Hopkins Medical School and for the past four years on leave of absence as Commander in the Medical Corps, USNR, has been appointed Professor of Pharmacology in the School of Medicine at the University of Virginia, succeeding the late Dr. James Alexander Waddell.

Dr. George M. Caldwell, formerly of White Sulphur Springs, West Virginia, after recently being discharged from the Navy has located for practice in Christiansburg with his office at the New Altamont Hospital.

Dr. Robert H. Flynn, Jr., is located at Radford where he is engaged in eye, ear, nose and throat disease practice.

Dr. R. Campbell Manson, Richmond, recently released from military service, has received the bronze star medal for meritorious achievement in connection with military operations in Italy.

Dr. Richard C. Neale, Richmond, has moved to Bluefield, West Virginia, where he is connected with the Bluefield Sanitarium.

Continued on page 76

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Continued from page 74

Dr. W. E. Baker, for several years in charge of the Venereal Disease Control work of the Virginia State Department of Health, has located in Alexandria, associated with Dr. James W. Love.

Dr. Galen G. Craun, Richmond, has located in Harrisonburg, practice limited to surgery.

Dr. R. M. DeHart has moved from Christiansburg to Radford.

DEATHS

Dr. Hugh Carter Henry, Richmond, aged 70, died recently.

Dr. Frederick Gochnauer, Upperville, aged 50, died recently.

Dr. Emmett Wood Mead, Castlewood, aged 83, died recently of senility.

Dr. Everett A. Land, Norfolk, aged 65, died recently.

WEST VIRGINIA

Kanawha County Medical Society has elected Dr. George F. Grisinger, President; Dr. Spencer L. Bivens, Vice-President; and Dr. T. Paul Mantz, Secretary-Treasurer, all of Charleston.

Association of Pathologists of West Virginia was recently organized in Morgantown with Dr. Clement C. Fenton, Morgantown, President; and Dr. William T. McClure, Wheeling, Secretary-Treasurer.

Dr. Orin R. Yost, Aiken, South Carolina, has been named Superintendent, Weston State Hospital, Weston, succeeding Dr. Harry A. Gerrison, resigned.

Dr. Lawrence F. Boland, Williamson, has been named Health Officer, Mingo County, succeeding Dr. Sixtus G. Zando.

Dr. N. H. Dyer, Bartley, has in charge of his industrial practice during his absence Dr. C. F. Jackson, formerly fo Bradshaw. Dr. Dyer will receive his master's degree in public health in June after taking special work in the Department of Public Health, University of Michigan.

A committee named to plan construction of a permanent home for the West Virginia State Medical Association is composed of Dr. William R. Laird, Montgomery, Chairman; Dr. A. U. Tieche, Beckley; Dr. T. W. Moore, Huntington; Dr. R. O. Rogers, Bluefield; Dr. John E. Cannaday, Charleston; Dr. Frank V. Langfitt, Clarksburg; and Dr. D. A. MacGregor, Wheeling.

Dr. Thomas Kerr Laird, and Miss Ruth Lee Carper, both of Montgomery, were married recently.

Dr. W. W. Huffman, Oak Hill, has moved to Gassaway.

Dr. George O. Nelson, formerly of Boston, Massachusetts, who has been in industrial practice at Radford, Virginia, is full-time physician at the Nitro plant of the American Viscose Corporation.

Dr. Eugene S. Carter, Jr., Minden, has moved to Montgomery.

Dr. Jacob S. Huffman, Harman, has moved to Dayton, Virginia.

Dr. H. A. Smith, Huntington, has moved to Madison and is on the staff of the Madison General Hospital.

West Virginia physicians who have recently been released from military service and returned to practice are Dr. R. J. Condry, Elkins; Dr. George L. Vieweg and Dr. F. H. Dobbs, both of Wheeling; Dr. William H. Allman, Dr. Sobisca S. Hall and Dr. James G. Ralston, all of Clarksburg; Dr. Wm. P. Bradford and Dr. Harold B. Ashworth, both of Moundsville; Dr. Holmes Blair, Parkersburg; Dr. Harry E. Baldock, Dr. John E. Lutz and Dr. Vincent T. Churchman, all of Charleston; Dr. John E. Stecker, Dr. Keith E. Gershow and Dr. Lucien M. Strawn, all of Morgantown; Dr. H. L. Hegner, Wellsburg; and Dr. Eugene R. McNinch, Hollidays Cove.

DEATHS

Dr. Dana Lawrence Cavendish, Fayetteville, aged 47, died recently of heart disease.

Dr. Edward Thomas Wade Hall, Weston, aged 81, died recently of uremia.

Dr. Dorsy McNeelas Ryan, Charleston, aged 67, died recently of acute myocardial insufficiency.

Dr. Alfred Charles Taylor, Mona, aged 67, died recently as result of a cerebral hemorrhage.

Dr. Charles Alphons Wingerter, Wheeling, aged 80, died recently.

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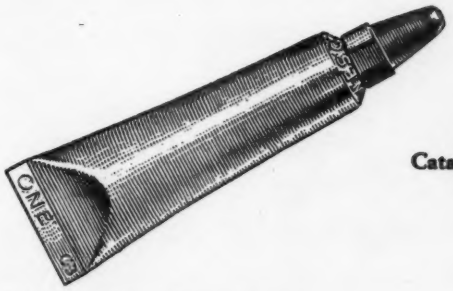

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*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, Am. J. Dis. Child. 66:1-11, July 1943.

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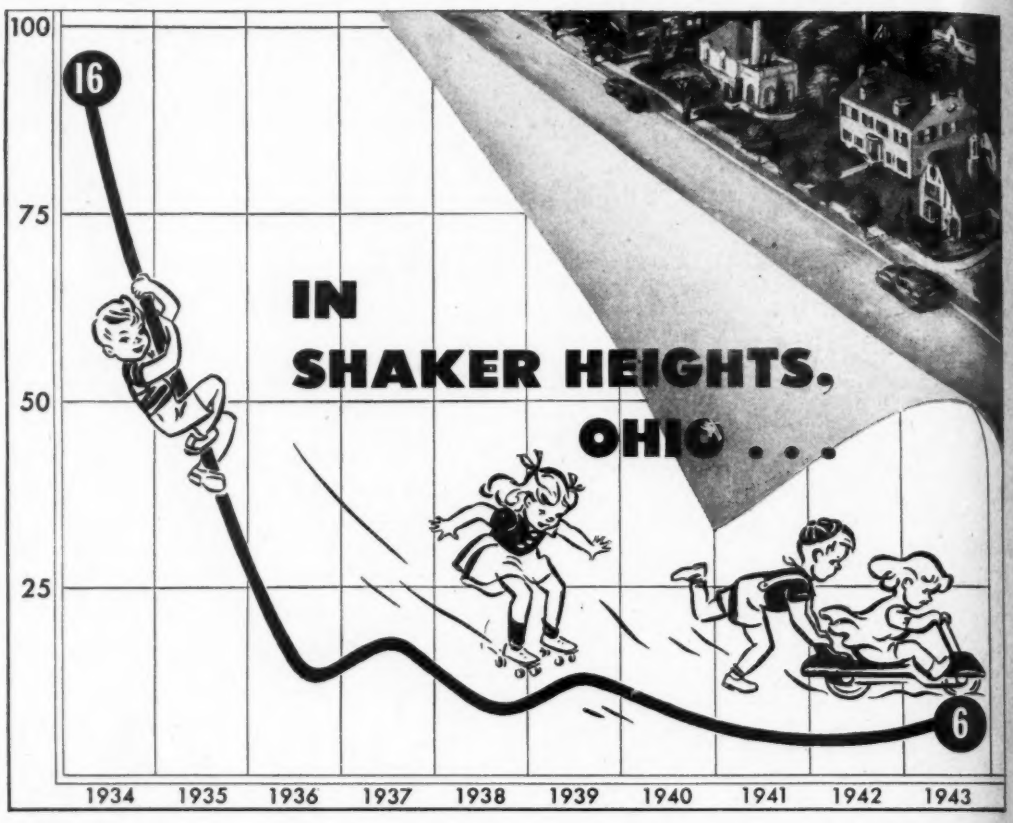

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[1] Garvin, J. A., Ohio State M. J. 41:229, 1945.

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